

PARTNER-SPECIFIC ABSTINENCE STATE CHANGE IN ADOLESCENT
WOMEN

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Abstinence as a protection against STD and unwanted pregnancy is highly promoted by public health and health education professionals. However, few studies of abstinence have focused on abstinence within the context of partnerships, particularly as relationships change over time. Understanding the factors that predict abstinence states and how those states may change over time is important to understanding sexual decision-making. In this longitudinal study of 365 young women, the influence of relationship quality, motivations for coitus, sexual relationship satisfaction, sexual self-efficacy, sexual conservatism, and religiosity were evaluated in a static model using cross-sectional data from enrollment and in a state change model using longitudinal data. All measures were partnership specific with the exception of sexual conservatism and religiosity. The main study hypothesis was that relationship quality is associated with abstinence state and influences state change within partnerships. Age, relationship quality, motivations for coitus and sexual relationship satisfaction were all negatively associated with abstinence while sexual conservatism had a positive association in the static model. State change from sexually active to abstinent was associated positively with sexual conservatism and negatively with age, sexual desire and relationship quality. For transitions from abstinent to sexually active, the direction of the association for age and sexual conservatism was reversed and relationship quality and sexual desire were no longer a significant factors. Understanding abstinence within the context of partnerships is useful for the development of programs designed to promote healthy sexual decision-making. Important findings from this study were that understanding of relationship quality may result in more appropriately targeted education and intervention messages; sexual conservatism may be a more important construct than religiosity for promotion of abstinence; and, understanding sexual desire and other motivations for coitus within partnerships may provide useful information to health practitioners.

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Chapter 1

INTRODUCTION

Statement of the Problem

The focus of the study was on the individual and contextual factors that influence the probability of within partnership change in abstinence states of young women. Specifically, the study was an attempt to answer the following research questions:

1. Is relationship quality associated with abstinence and is this association, if any, influenced by other contextual factors?
2. What is the relationship between motivations for coitus and relationship quality?
3. Is relationship quality associated with abstinence state change, either from abstinence to sexual activity or the reverse?
4. Is the association between relationship quality and abstinence state change, if any, affected by contextual or personal characteristics?

Purpose of the Study

If young women in high quality dating relationships are more likely to maintain, or move into, an abstinent state within a partnership, then a better understanding of the specific factors that influence changes in the state of abstinence, may suggest strategies for improving self-protective

relationship skills in young women. Data from this study may be useful for designing programs aimed at promoting sexual abstinence and healthy sexual development in young women.

Need for the Study

Female virginity has been a culturally important concept in Western societies for many centuries. In the past, the importance of ensuring the paternity of heirs was a driving force in maintaining virginity until marriage. With the sexual revolution and the advent of hormonal contraception, the social desirability of virginity was diminished. Emphasis on the importance of virginity, or following loss of virginity, abstinence, has received renewed attention in public health and health education as a result of increased rates of teenage pregnancy, STI and HIV (Maticka-Tyndale, 1991).

As a result of the increased attention devoted to abstinence, religious leaders in the United States (US) have spearheaded a resurgence of efforts to promote virginity and abstinence on religious and moral grounds. This movement is an example of an organized attempt to influence societal norms. This movement has influenced society sufficiently that Federal funding has been targeted toward health education programs emphasizing abstinence, and in many cases actively repressing discussion of alternative reproductive health options (Hamburg, 1992).

This approach has met with mixed success and no single program has clearly demonstrated lasting effects of reduced rates of STI or unwanted pregnancy. Short-term follow-up or cross-sectional studies have demonstrated modest reductions in STI rates, numbers of partners and intention to have sex (Anonymous, 1997; Denny, Young, Rausch, & Spear, 2002; Kirby, 2001b; Lenaz, Callahan, & Bedney, 1991). However, many studies do not differentiate between delaying onset of sexual activity and reducing sexual risk, such as reduced numbers of partners, in non-abstinent populations. Many studies intentionally target sexually active adolescents in efforts to reduce high-risk behavior and achieve measurable outcomes such as reduced rates of STI before and after interventions. However, little data exists on the factors that influence changes in abstinence states, particularly from sexually active to abstinent.

The influences of family and peers on the decision to become sexually active have been the focus of many studies of adolescent sexual behavior. These studies have suffered from a lack of extended follow-up with intense data collection and have therefore been limited in their findings. However, the data obtained from these studies are encouraging. For example, positive family environment has been shown by Jensen and colleagues (Jensen, De Gaston, & Weed, 1994) to result in delayed onset of sexual activity and peer pressure can be a positive influence that empowers young women to engage in self-protective behaviors (Langer & Zimmerman, 1995). In contrast, peer-influence has also been shown by

French and colleagues (French & Dishion, 2003) to have a negative impact in the sexual risk taking including sexual initiation. These conflicting findings may be the result of neglecting to consider the impact of the dyad-specific interactions that may lead to abstinence state change with specific partners. The results of all of these studies can be strengthened by the addition of detailed information from young women prior to and following periods of sexual activity or abstinence to identify those factors that are important to providing a supportive environment that encourages abstinence as a component of healthy sexual decision-making in the context of dating relationships.

Delimitations

The scope of the study was delimited to:

1. Three eight six women recruited from three primary healthcare clinics serving urban Indianapolis, Indiana. Following enrollment, participants attended the clinic on a quarterly basis where they completed intensive structured interviews.
2. Women aged 14-17 at enrollment and followed for up to 60 months.
3. Young women for whom parental consent was given for participation.
4. Self-report data regarding sexual behaviors and operationalized definitions of perceptions of relationship quality and sexual self-efficacy.

5. Data collected using instruments developed for this study (see Appendices C and D). Instruments included a self-administered questionnaire and a structured interview. All forms were in scannable format to facilitate data capture and management.

6. Interviews and annual questionnaire administration performed by trained, female study personnel.

7. Data collected during the period from July 1997 to September 2007.

Limitations

The results of the study were interpreted considering the following limitations:

1. Research participants were consenting volunteers for whom parental permission was also obtained. Participants were women who were willing to comply with the intensive data collection and health screening procedures that were carried out over the 27-month follow up period.

2. The convenience sample used in the study was restricted to women attending primary health care clinics that predominately serve an inner-city, urban population.

3. Sexual behaviors occur within a complex milieu of personal behavioral characteristics, interpersonal and relationship skills and social influences. No study can adequately measure all of these constructs in

sufficient detail to control all of the variables that may impact the probability of abstinence state change.

4. Data collection may have been subject to a variety of biases. The sensitive nature of the information collected may have resulted in social desirability bias that would result in underreporting of sexual activities. The intensity of the data collection may have resulted in maturation bias as respondents wearied during the lengthy interview. Patterned response bias may have occurred as a result of the repeated measures in the quarterly interview.

5. The rapport that developed between the interviewers and participants may have resulted in either misrepresentation of activities or in changes in behavior as a response to sexual health information conveyed by the interviewers.

6. The instruments used in this study have not been evaluated by any other group, or in any other population, for validity and reliability. Validity and reliability data will be derived exclusively from this study sample.

7. Due to the constraint of Markov modeling, only those 3-month periods with the same partner named at the beginning and the end were included in the analysis.

Assumptions

The study was based on the following assumptions:

1. At least some of the young women would change abstinence states prior to the end of the follow-up period.
2. Partner-specific relationship quality plays a role in the decision-making processes that are important to determining abstinence states.
3. Changes in abstinence states follow a Markov process. Therefore, changes in abstinence state are dependent only on the state at the previous time point and states prior to that are irrelevant.
4. The respondents understood the questions being asked and were able to respond appropriately.
5. The sexual behaviors being measured were clearly defined and had the same meaning to all participants.
6. Self-report data regarding sexual behaviors was accurate and reliable.
7. Relationship quality can be measured using scales containing declarative statements and Likert-like scoring.

Hypotheses

The study was designed to test the following hypotheses:

1. Relationship quality is not associated with abstinence.
2. Relationship quality is not associated with motivations for coitus.
3. Religiosity does not change over time.
4. Sexual conservatism does not change over time.

5. Relationship quality is not associated with transitions from sexually active to abstinent.

6. Relationship quality is not associated with transitions from abstinent to sexually active.

7. Sexual relationship satisfaction does not influence the association between relationship quality and abstinence state change.

Definition of Terms

Abstinence. A period of at least 90 days without sexual intercourse.

Adolescent. An individual aged 11-21.

Coitus. Penile-vaginal penetrative intercourse.

Dating. For the purposes of this study, dating is defined as having a relationship with a male with a more serious commitment than friendship.

Early-adolescence. Period from 11-14 years of age.

Family. The nuclear unit of primary care-givers and siblings. Primary care-givers may include parents, grandparents, other blood relations (e.g. aunts, older siblings) or legal guardians.

Human Immunodeficiency Virus (HIV). The etiologic agent responsible for acquired immunodeficiency syndrome (AIDS), an incurable, life-threatening disease that is transmitted sexually and through exchange of blood and body fluids.

Late adolescence. Period from 18-21 years of age.

Mid-adolescence. Period from 14-17 years of age.

Onset of sexual activity. Ending a period of abstinence as a result of sexual intercourse.

Peer. A friend or acquaintance within the social network of the study participant.

Relationship quality. A composite of responses to questions regarding the strength, openness and importance of dating relationships

Religiosity. A measure of the strength and importance of religious beliefs in daily living.

Secondary virginity. A state of abstinence occurring at some point after sexual initiation.

Sexual activity. In the questionnaires and interviews used in this study, any sexual activity (e.g. kissing) is categorized as “sex”. Definitions were provided at the beginning of each interview. For this project, sexual activity referred specifically to coitus

Sexual initiation. Loss of virginity as a result of consensual vaginal intercourse.

Sexual intercourse. For the purposes of this study, only heterosexual, penile vaginal penetration is considered as sexual intercourse.

Sexually transmitted infection (STI). Bacterial, protozoal and viral diseases that are spread through sexual contact including sexual intercourse. HIV is not included in the categorization of STI. Instead, because of its public health significance, HIV is referred to separately from the traditional diseases that are transmitted sexually.

Virginity. For the purposes of this study, virginity is the state of being prior to first-time consensual vaginal intercourse.

Chapter 2

REVIEW OF THE LITERATURE

Understanding the factors that influence onset of sexual activity in adolescents is important to understanding healthy sexual development which is a primary function of adolescent development. The factors that influence the decision to become sexually active initially and then to change from a state of sexual activity to a state of abstinence, or the reverse, are poorly understood in this population for whom sexual experience is used to define the sexual self that will be carried into adulthood. These sexual experiences may include non-coital sexual activities such as kissing, hand holding, and touching as well oral, vaginal and anal intercourse. Understanding the process of choosing to abstain from intercourse may be as informative as studying the process of choosing to engage in coitus. It is particularly important to understand the differences in processes that are specifically related to an individual partner. Adolescents that are sexually active are not necessarily engaging in intercourse with every member of the opposite sex within their acquaintance. The factors that influence abstinence state changes must be considered in a partner-specific context in order to fully understand the reciprocal effects of stable personality characteristics, stable sociocultural features of the environment, and variable partner-specific relationship qualities. From a medical, problem-based perspective, understanding the

factors that influence abstinence state change is important to the design and development of strategies intended to protect youth from the negative outcomes of adolescent sexual behaviors. Understanding the different influences that may affect whether a behavior is part of a healthy developmental process or indicative of unwanted risk to the individual is critical to learning how to design programs intended to foster healthy sexual development in adolescents.

Studies that have investigated adolescent development, sexuality and behaviors will be reviewed in an effort to provide sufficient background for the study of the more specific topic of partner-specific abstinence state change. The first section will describe the reason for emphasis on abstinence in today's society. The second section will describe the difficulty of defining and measuring sexual behaviors, abstinence and "having sex". In the next section, findings regarding stable individual characteristics from studies of abstinence and initiation of sexual activity will be described. Conclusions regarding the demographic and psycho-social correlates that have been identified will be included. The fourth section will contain the results of intervention evaluations. The next section will discuss the interaction of stable person characteristics and relationship-specific factors. Finally, models and theories that have been derived from the research on stable individual factors that provide a beginning of the conceptual framework for the current study will be reviewed. This section will also include a review of the literature related to

the cognitive affective personality systems framework, feminist perspective, social constructionism, and sexual script theory which also inform the conceptual framework for the current study.

Relevance of Abstinence in Adolescence

Background

Abstinence, whether primary or secondary, may hold various meanings for adolescents depending on developmental stage, gender and socio-cultural factors. Regardless of the meaning attributed to this concept, it remains a significant factor in the developing definition of the sexual self. Abstinence and the cessation of abstinence are markers of sexual and social maturity and both can have positive and negative ramifications (Ott, Pfeiffer, & Fortenberry, 2006). Abstinence is discussed below from both a normative developmental perspective and a public health, problem-based perspective.

Normative Development

One of the critical functions of adolescence is development of adult personality characteristics including defining the general self, the sexual self, developing self-esteem, and interpersonal relationship skills (Graziano & Ward, 1992; Kuttler & La Greca, 2004; Ott et al., 2006). As with any component of the personality, the sexual-self can only truly be developed and defined through experience, whether direct or indirect by sharing of

experiences via a social network. Adolescents progress from a childhood state of high reliance and responsiveness to the family to a decrease in the level of this association and an increased influence of peers and members of social networks (Bachanas et al., 2002; O'Sullivan, Meyer-Bahlburg, & Watkins, 2000; Ott et al., 2006). Adolescents' interactions within social networks inform the development of individual sexual cognitions by establishing group norms for developmental milestones. As adolescent development continues, heterosocial networks form and the influence of relationship partners often supersedes that of same sex peers (Kuttler & La Greca, 2004).

This period is also marked by development of resilience factors such as coping skills (Bachanas et al., 2002; Fergus & Zimmerman, 2005). The use of resilience theory described by Fergus et al. (Fergus & Zimmerman, 2005), suggests that focusing on the factors that enable adolescents to adopt healthy lifestyles, rather than on risk factors that lead to negative outcomes, may provide more useful paradigms for helping adolescents to safely negotiate this turbulent period of development. This positive focus requires identification of resources (external factors that support positive development) and assets (individual factors such as self-esteem, self-efficacy and coping skills) available to adolescents and design of methods for engaging these positive factors.

Although normative, as opposed to deviant, development is a socially defined construct (O'Sullivan et al., 2000), the process is

universally defined by transitions that involve emergence of new behaviors, discontinuation or modification of existing behaviors, and/or re-clustering or re-patterning of sets of behaviors (Graber & Brooks-Gunn, 1996). New behaviors pertaining to sexual development may include the transition from primary abstinence to sexual initiation. Behaviors pertaining to relationships between adolescents and their families, peers and romantic partners may undergo modification or discontinuation as the relative importance of these relationships shifts during this time of transition. Finally, existing behaviors may be re-clustered into groups of behaviors that form lifestyles that may be healthy or may lead to increased risk of negative outcomes.

These processes are influenced by both individual personality differences and the situational context of the individual. Graber and colleagues (Graber & Brooks-Gunn, 1996) propose that development, manifested as behavioral changes, varies among individuals by the timing of transitions, the events that occur during transitions, accentuation of certain personality characteristics during transition, difficulty coping with transitions, appropriateness of transitions to the individual's environment, increased vulnerability to stressors during transitions, and changes in developmental trajectories during transitions.

The transitions that are an essential function of the normative development of adolescents include the transition from sexually naïve to sexually cognizant and a healthy development of the sexual self including

sexual self-esteem, sexual self efficacy, adopting sexual norms, understanding sexual desire and development of sexual agency. Although this developmental process begins, and is often completed, during adolescence, scant attention is paid to understanding healthy sexual developmental trajectories that lead to sexual competency in adulthood.

An excellent overview by Welsh and colleagues (Welsh, Rostosky, Kawaguchi, Travis, & White, 1999) demonstrates the common tendency to consider sexual behaviors, particularly in adolescent women, from a problem-based perspective, considering sexual behaviors as nothing more than risk factors for sexually transmitted infections (STI), human immunodeficiency virus (HIV) infection, and unwanted pregnancies (Bailey, Gao, & Clark, 2006; Cleveland, 2003; Else-Quest, Hyde, & DeLamater, 2005; Eyre & Millstein, 1999; French & Dishion, 2003; Loewenson et al., 2004; Miller, Clark, & Moore, 1997; O'Donnell, O'Donnell, & Stueve, 2001). Welsh et al. contend that the problem-based model extends from patriarchal control of female sexuality in Western societies. Additionally, since the majority of studies are focused on disadvantaged (often Black) youth, such deficit models are also racist in their underpinnings. It is therefore critical to encourage framing questions in the context of normal, healthy development of female adolescent sexuality (Haglund, 2006).

Sexual Development

Normative sexual development can be considered from several perspectives including cognitive/affective, biological and behavioral dimensions. Although these dimensions are often studied separately, it is important to recognize that these are integrated components of an individual and must have reciprocal effects that should be considered when designing studies or programs. A developmental system model has been described that attempts to integrate social environment and experiential context into the biological models that relate adolescence and puberty to changes in sexual behaviors (Halpern, 2006). This model predicts a reciprocal relationship between the three dimensions that suggest study of only the biological aspects of sexuality may result in misleading conclusions. This model is supported by data from a study that evaluated race, pubertal timing and peer relationship qualities (Cavanagh, 2004). In this study the authors described a mediating effect of race and friendship group measures on the association between pubertal timing and coital debut. In other words, biological development alone was not a sufficient predictor of age at first intercourse. Although biological development is a key element of this transition period, it is beyond the scope of my research project and will not be discussed in great detail.

Cognitive and affective development. A significant component of adolescent sexuality development is the formation and evolution of sexual identity. The first phase of this process is the recognition and definition of

the sexual self in the period of primary abstinence. In this phase, the construction of identity is based on the recognition of sexual feelings while the physical activities associated with these feelings have yet to be experienced. Mullaney describes this as “...identities based on ‘Not Doings’” (Mullaney, 2001) and provides an analysis of fictional literature to demonstrate some Western norms related to such identities. In her review, Mullaney describes the interesting phenomenon of social perceptions outweighing reality in determining the social identity of virgins versus nonvirgins. She provides several descriptions of women who have never engaged in coitus, but are considered to be “soiled” and conversely women who have engaged in coitus, but are considered to be “pure”. While this literary analysis is based on 19th century norms and mores, it provides an interesting demonstration of the socially constructed nature of sexual status.

Following the development of an abstinent sexual identity, evolution of this identity is inevitable as individuals progress into a sexually active state (Buzwell & Rosenthal, 1996; Day, 1992). This change should be preceded by recognition of feelings of desire, an area that is woefully underrepresented in academic research. By failing to fully understand sexual desire, and to engage in meaningful dialog intended to help adolescent girls understand and manage their own desires, we leave young women to develop means for handling such desires with poor input from adult role models. In fact, even in those instances where mentoring

programs are designed to assist young women with healthy sexual development, the paternalistic nature of our society has indoctrinated the women that serve as mentors and role models to the point that they cannot openly discuss and encourage healthy expressions of sexual desires (Bay-Cheng & Lewis, 2006). Further, not only is sexual desire a topic that is rarely and poorly discussed with young women in formal settings, when it is addressed, it is predominately from a heterosexual perspective as if that is the only legitimate lifestyle available to young women (Tolman, 2006). These factors combine to silence young women (Tolman, Impett, Tracy, & Michael, 2006) and undermine the development of sexual agency during the critical period of sexual identity development.

The emphasis placed on abstinence in the current social environment and the continued drive to create “feminine” women encourage retention of the identity based on “Not Doing” and place women in the role of “gate keeper”(Weisfeld & Woodward, 2004). In this paradigm, adolescent boys are not held responsible for controlling their own sexual desires (these are considered normal and healthy as opposed to women’s sexual desires). This classically described double standard results in conflict and confusion for young women that may hinder progression of a healthy sexual developmental trajectory (Feldman, Turner, & Araujo, 1999).

One of the few studies describing development of the sexual self was conducting using participants from Australian high schools (Buzwell

& Rosenthal, 1996). In this study, sexual self-esteem, sexual self-efficacy and sexual attitudes were compared across the 4 classes (freshman through senior) of high school students. The authors presented data describing not only differences based on class (age), but also based on sexual styles defined here as sexually naïve, unassured, competent, adventurous or driven. The distribution of the style groups varied by both age and gender. Interestingly, sexual self-esteem and self-efficacy were lowest in the sexually naïve group ($p < .001$) with the exception of self-efficacy regarding the ability to say no to unwanted sex, which was high in this group. The sexually competent group had the healthiest distribution of scores with high sexual self-esteem and self-efficacy and low sexual anxiety scores. These findings suggest that adolescents who engage in some level of sexual activity may be on a healthy sexual development trajectory.

Behavioral changes during sexual development Cognitive/affective changes that occur during development of the sexual self are based on the observation of adult role models as discussed above and influenced by interactions with peers and romantic partners (Hearn, Rodriguez, & O'Sullivan, 2003; Nangle & Hansen, 1998). During this process, sexual experiences also influence the adoption of sexual attitudes and beliefs in a reciprocal manner. O'Sullivan and colleagues (O'Sullivan & Brooks-Gunn, 2005) suggested that the relationship between sexual cognitions and behaviors is unidirectional. In a longitudinal study of 180 young women,

changes in sexual cognitions related to sexual self-esteem and arousability preceded changes in sexual behaviors and remained relatively stable following sexual initiation. However, it is important to note that women who had not yet engaged in any sexual behavior (including touching) reported lower levels of both sexual self-esteem and arousability. The study reported that earlier sexual activities and pre-coital activities may be more pivotal experiences for determining sexual developmental trajectory. This finding implies that, for groups that begin these activities at a young age, there are reduced opportunities for developing sexual attitudes via indirect experiences prior to engaging in sexual behaviors (Nangle & Hansen, 1998).

Several studies have described the progression from sexually naïve to a non-abstinent state (Feldman et al., 1999; Feldmann & Middleman, 2002; O'Sullivan & Brooks-Gunn, 2005; Schwartz, 1999). Non-coital sexual behaviors such as hand-holding, kissing, touching genitals and oral sex often precede sexual initiation and have been associated with quality of dating relationships. Interestingly, in a study of community-college students, while respondents endorsed older ages in a normative timetable for sexual activities with casual partners versus serious partners, the reported actual timetables for participants was younger in casual relationships than in serious relationships for all activities except oral and anal sex (all p -values $<.01$) (Feldman et al., 1999). This suggests that experimentation may frequently occur in less serious relationships and in

response to these experiences individuals develop both sexual identity and agency.

Bachanas et al., (Bachanas et al., 2002) reported that for teens in the early stages of adolescence (aged 12-15), increased confidence in the ability to negotiate and practice self-protective sexual behaviors was associated with increased length of primary abstinence and fewer sexual partners following sexual initiation. These findings indicate the importance of normative development of sexual self-efficacy for engaging in self-protective behaviors. Indeed a function of healthy adolescent development is learning the skills necessary to practice abstinence when desirable (Haglund, 2006).

Research approaches

Using the models suggested by Graber, et al. (Graber & Brooks-Gunn, 1996) several features of sexual development could be included in the study of abstinence in adolescence. Timing of sexual initiation may be classified as normative or problematic based on the adolescent's environment. In an ethnographic study of adolescent girls' perceptions regarding the appropriateness of the timing of first intercourse, Cotton and colleagues (Cotton, Mills, Succop, Biro, & Rosenthal, 2004) found that 78% of sexually active adolescents interviewed felt that they had been "too young". It is clear that the meaning of early experiences and their influence on sexual development is affected by many factors including

gender, age at first coitus and socio-cultural context (Else-Quest et al., 2005; Holland, Ramazanoglu, Sharpe, & Thomson, 2000; Ott et al., 2006).

Negative Outcomes and Medicalization of Adolescent Sexuality

Emphasis on the importance of abstinence has received renewed attention in public health and health education as a result of increased rates of teenage pregnancy, sexually transmitted infections (STI) and human immunodeficiency virus (HIV). This misplaced emphasis of negative medical outcomes has been exacerbated by the federal funding of abstinence-only sexual education programs that often rely on fear and misinformation to convince teens that abstinence is essential to good health.

Unwanted pregnancy in teens is a serious burden on the overall health and welfare of Western societies. Age at coital debut has been negatively correlated with rates of unwanted pregnancy and risk for STI and HIV (O'Donnell et al., 2001). In the United States, the majority of all new cases of HIV infection are now in the population aged 15-24 (Centers for Disease Control and Prevention, 2002). The lag time between infection and diagnosis implies that these infections occurred during adolescence. The distribution of infection is similar for men and women, but is disproportionately high for minorities.

Loss of virginity may result in a range of emotional reactions from a feeling of empowerment to feelings of regret and dissatisfaction (Holland

et al., 2000; Rector, 2002). Therefore, while onset of sexual activity may be a positive experience for some youth, for others it may have negative emotional and psychological consequences (Whitten, Rein, Land, Reppucci, & Turkheimer, 2003). These outcomes may be a function of the circumstances under which the activity occurred as well as the quality of the relationship with partners. Engaging in sexual activity may also result in varied responses depending on the cultural setting of an individual (Day, 1992; Rostosky, Regnerus, & Wright, 2003). However, although the risk of negative outcomes is a serious public health concern, focusing exclusively on the negative aspects of non-abstinence may be a disservice to adolescents in the process of developing sexually.

Measuring Abstinence

Defining Abstinence

Virginity and abstinence are not straightforward concepts and the definition of “having sex” is dependent on the population or individuals under study. Definitions of virginity for women range from never having been touched by a male to having an intact hymen to never having had fully insertive intercourse (Bravender, Emans, & Laufer, 1999; Buzwell & Rosenthal, 1996; Carpenter, 2001a, 2001b; Goodson, Suther, Pruitt, & Wilson, 2003; Grant, 1995; Hawkins et al., 2002; Holland et al., 2000; Mullaney, 2001; Ott et al., 2006; Rosenthal et al., 2001; Sanders & Reinisch, 1999; Schuster, Bell, & Kanouse, 1996; Scorgie, 2002; Stevens-

Simons, 2001). Students asked to define both virginity and abstinence by Hawkins and colleagues (Hawkins et al., 2002) replied with varied and imprecise definitions. In a study of high school virgins in Los Angeles, Schuster and colleagues (Schuster et al., 1996) found that over one-third of virgins were engaging in some form of partnered sexual activity. These activities ranged from mutual masturbation to oral and anal sex. This study demonstrates that sexual behaviors exclusive of vaginal intercourse occur in a large proportion of virgin adolescents and are worthy of further study. Women engaging in sexual behaviors exclusive of coitus remain at risk for STI, albeit lower risk than women engaging in intercourse (O'Donnell et al., 2001).

Finally, abstinence, primary or secondary, is a state of being that needs to be viewed in the context of the relationships in which this state is maintained or altered. Some investigators specifically define age of sexual initiation as the age of first *consensual* intercourse (French & Dishion, 2003) and this definition will be used here as well. However, abstinence is not necessarily a bivariate measure; the length of abstinence may affect the level of risk of negative outcomes. Also, individuals engage in sexual activities with only certain of their romantic partners and only at certain times in those relationships. Many individuals engage in sexual activity and subsequently choose to return to an abstinent state for a variety of reasons including relationship factors, other social or psychological factors, or for health reasons. Additionally, the psycho-social context in which

abstinence is practiced may also affect the meaning and importance of this state (Whitaker, Miller, & Clark, 2000). Finally, the meaning of abstinence is, as mentioned above, socially constructed and dependent on the meaning given to sexual (including non-coital) experiences. All of these factors combine to make defining and measuring abstinence difficult.

Duration of sexual inactivity One of the first features of abstinence that must be defined is abstinence from “what”. For the purposes of this work, abstinence will be defined as lack of coital activity. Primary abstinence will be defined as never having engaged in *consensual* vaginal intercourse. Defining secondary abstinence requires determining a period of time after which not engaging in coital behaviors qualifies as a state of abstinence. This is a difficult period to define, but for the purpose of the current study, this will be defined as 90 days (or 3 months). Therefore, adolescents who have not engaged in vaginal intercourse for at least 3 months will be considered to be abstinent and this will be defined as secondary abstinence if an individual has, at any time prior to the preceding three months, engaged in coitus. This definition of secondary abstinence is also referred to as a period of sexual inactivity. Published studies have used a variety of definitions for the length of abstinence ranging from several days to 6 months (d’Arcangues, Kennedy, & Research Group on Methods for the Natural Regulation of, 2001; Nettleman, Ingersoll, & Ceperich, 2006; Paradise, Cote, Minsky, Lourenco, & Howland, 2001; Zanis, 2005). In a

study by Zanis, all youth who reported ever engaging in coitus, engaged in intercourse during the 30 day follow-up period. This suggests that the 30 day period may have been too short to identify those youth that might have changed from sexually active to abstinent.

Abstinence state change Although abstinence is a changeable state, few studies have examined factors associated with changes in abstinence (Pinkerton, 2001). Longitudinal studies are required in order to measure this phenomenon. Interestingly, in a study of changes in sexual behaviors over time in a cohort of young women, O'Sullivan et al. (O'Sullivan & Brooks-Gunn, 2005) excluded from analysis girls who reported sexual activity at time 1 and did not at time 2. This exclusion may make sense if the assumption is that the change is a result of measurement error associated with self-reported measure of lifetime sexual activity. This phenomenon has been in the context of “recanting” lifetime sexual activity described in the context of virginity using data from the National Longitudinal Study of Adolescent Health (Add Health) (Rosenbaum, 2006). Thus, the possibility exists that individuals who had chosen to become abstinent, and were therefore now reporting no lifetime sexual activity, were not included in this analysis of development of sexual cognitions in the context of behaviors. This exemplifies the difficulty of understanding the factors that influence abstinence states changes based on currently available data.

Partner-specific abstinence As mentioned above, individuals do not engage in sexual activities with all of their heterosocial contacts. Instead, certain qualities of a romantic relationship should lead to changes in abstinence state. For example, in new relationships, young women may be inclined to engage in coitus in order to cement the relationship while this may no longer be necessary once a relationship is well established. Alternatively, women may avoid intercourse until a relationship is well advanced and certain level of intimacy has been achieved. Understanding the differences in the effects of relationship qualities on the decision to be abstinent or not is critical, but not extensively studied. Rostosky et al. (Rostosky et al., 2003) performed one of the few studies that considered abstinence in the context of the relationship in which sexual activities occur. Unfortunately, the measure was limited to the opportunity to engage in coital activities based on the number of romantic partners reported by adolescent women. Therefore, the specific relationship qualities that might be predictive of abstinence state or state change could not be evaluated.

In a study by Whitten and colleagues (Whitten et al., 2003), relationship quality measures were included in a model of negative outcomes of sexual activity. However, this study did not provide information about the association between relationship measures and sexual behavior, but instead focused on emotional response to sexual activity. This report provides an interesting beginning point for

understanding the factors that may precipitate a state change from sexually active to abstinent. Based on the data presented, one could hypothesize that young women who do not feel good about themselves following sex may be more likely to be in relationships of poor quality and may be considering an abstinence state change in response to relationship factors. Alternatively, if coitus is used as a coping method for poor quality relationships, maintaining a sexually active state may be more likely. The paucity of data regarding the adaptive ability to change abstinence states clearly calls for further research in this area.

Although studying abstinence states in the context of relationships suggests that studies must include males and females in order to examine both sides of these interactions, the fact that young women are significantly more likely to engage in unwanted coitus than young men (L. A. Smith, 2003) justifies a focus on the young women's perspectives. However, this leads to measurement difficulties with few instruments designed to capture data regarding either abstinent behaviors or relationship qualities (Harvey, Bird, Henderson, Beckman, & Huszti, 2004) and the discordance between partner-reported and self-reported behaviors (Lenoir, Adler, Borzekowski, Tschann, & Ellen, 2006).

Methods in Abstinence Research

There are several deficits in the repertoire of methods used for abstinence research. Perhaps the most overwhelming issue is the

measurement of any sexual behavior in any population and in adolescents in particular. Adolescents are in a developmental phase that inherently renders them somewhat vulnerable and therefore particular sensitivity should be used when designing research programs that involve adolescent participants (Santelli et al., 2003). However, this should not discourage research involving adolescents since it is unrealistic to merely extrapolate findings from either adults or children to this population (Eyre, Hoffman, & Millstein, 1998). Many studies to date have used primarily health outcome measure, such as STI or unwanted pregnancies, to measure the success of interventions designed to encourage abstinence. Some have also included self-reported behaviors as well and the issues associated with these measures will be discussed below. Use of health outcomes provides a biomarker for sexual activity that is independent of many of the recognized biases regarding self-report (Orr, Fortenberry, & Blythe, 1997). However, this strategy may reinforce the negative, medicalization of developing sexuality, particularly in young women.

Measuring sexual behaviors Use of self-reported measures of sexual behaviors should be encouraged with the clear understanding that several biases can be expected in this type of measure, but the direction of these biases cannot always be predicted (Stevens-Simons, 2001). Some of the types of errors that are known to occur in sex research using self reported measures include the following: social desirability may cause respondents

to under-report or inflate actual levels of various sexual activities (Gillmore et al., 2001; T. E. Smith, Steen, Spaulding-Givens, & Schwendinger, 2003); frequent, but real, changes in attitudes and beliefs may be a hallmark of adolescence as cognitive and affective changes occur; memory errors make reduce the reliability of self-reported data; and, cultural differences may affect the meaning of various sexual terms and therefore influence responses based on respondent interpretation of items (Braun & Kitzinger, 2001; Eyre, 1997).

Response bias, particularly social desirability, may influence the quality collected during research into adolescent sexual behaviors. An encouraging study performed in a South African high school had high test-retest reliability for the question asking “have you ever had sexual intercourse....” Among the 358 respondents there was 95.8% agreement with a κ -score of 80.1 [95% CI 70.0-90.2] (Flisher, Evans, Muller, & Lombard, 2004). Interestingly, the changes in responses over the 14 day follow-up period resulted in a decrease in the number of respondents reporting sexual activity.

In an analysis of the impact of inconsistent reporting of virginity status, Upchurch and colleagues (Upchurch, Lillard, Aneshensel, & Li, 2002) found that with a sample size of nearly 20,000 the study conclusions were robust to these inconsistencies. However, few studies can hope to obtain samples of this size.

One approach designed to reduce reporting biases, particularly social desirability, is the use of audio computer-assisted self-interviews (ACASI) to collect data regarding sensitive behavioral activities (Webb, Zimet, Fortenberry, & Blythe, 1999). However, caution should be used when choosing measurement methods since the accuracy of reporting may be related to contextual factors such as culture, age and gender of respondents (Morrison-Beedy, Carey, & Tu, 2006).

Recall bias can be reduced by using diary data collection instruments. In an evaluation of the difference in responses when using a daily diary compared to 1-, 2- and 3-month recall, Graham et al. found that the only variable affected by length of recall was the frequency of vaginal intercourse (Graham, Catania, Brand, Duong, & Canchola, 2003). This is useful data to support the use of recall in study settings where daily diary data collection may be impractical. This is consistent with and extends, reports of high test-retest reliability over various time periods (2 weeks to 6 months) (Flisher et al., 2004; Hearn, O'Sullivan, & Dudley, 2003; Schrimshaw, Rosario, Meyer-Bahlburg, & Scharf-Matlick, 2006). A note of caution, particularly related to sexual initiation research, comes from a study conducted by Upchurch and colleagues (Upchurch et al., 2002). In this analysis of data from the Add Health study, over 11% of adolescents who reported sexual activity in Wave I, reported no lifetime sexual activity in Wave II which occurred 1-2 years after Wave I. This high level of reporting inconsistency occurred even though investigators had used

ACASI to attempt to remove social desirability bias. While this leads to concerns regarding the reliability of self-report of sexual behaviors, it may also suggest that a significant number of adolescents who have been sexually active transition into a state of abstinence and then self-define their sexual status accordingly (Rosenbaum, 2006).

Few specialized scales have been developed for measuring virginity, sexual debut and abstinence. There is no single well described research tool that is widely used for research into adolescent sexual behaviors. Investigators in this field routinely adapt existing measures or create new instruments to meet their specific research needs.

One such instrument is the Adolescent Clinical Sexual Behavior Inventory developed by Friedrich and colleagues (Friedrich, Lysne, Sim, & Shamos, 2004). This instrument was developed for use in non-research, clinical settings as a tool for assessing risk for future negative health outcomes. Unfortunately, this scale focused on negative, problematic behaviors often labeled by the authors as “deviant”. Therefore, this scale offers little utility for understanding behaviors in the context of normative sexual development.

An instrument that measures beliefs and attitudes regarding postponement of sexual initiation has been evaluated in a longitudinal study of over 16,000 teens in the US (Kahn et al., 2004). The psychometric properties of this mailed survey were analyzed based on the theoretical constructs they were intended to measure. The assignment of variables to

appropriate constructs was not clearly evaluated and caution should be used in interpreting findings obtained when using this scale. For example, the item “It is against my beliefs to have sex before marriage” was assigned to the construct of “Expectancies” not “Normative Beliefs”. Items were assigned to a construct if they loaded together based on factor analysis, but the method used for defining the construct measured was not described. This is an important illustration of the need to critically review the published psychometric properties of an instrument prior to incorporating it into a research design. Interestingly, in this study over 60% of both boys and girls endorsed the same 7 reasons for postponing sexual initiation. Further, although the scale predicted reported intentions to postpone sexual initiation, appropriate behavioral measures were not used to determine the utility of the scale in predicting actual behaviors and changes in behaviors over time.

Most measures include scales that assess attitudes about sexual behaviors, behavioral intentions and in some cases sexual experience (Denny et al., 2002; Norris, Clark, & Magnus, 2003). While most authors report some characteristics, such as internal consistency, of the instrument used, few describe the measurement tool in great detail. Nagy et. al. (Nagy, Watts, & Nagy, 2003) reported the psychometric properties of an instrument developed based on constructs from the Theory of Reasoned Action and Social Cognitive Theory. Items clustered into four constructs with reasonable reliability. The four constructs were Coital Intentions,

Attitudes toward Negative Sexual Outcomes, Social Norms for Premature Sexual Activity, and Self-Efficacy of Sexual Refusal Skills. The variables in the instrument explained 46% of variance in a study of adolescents in 22 schools in Alabama. This is a promising instrument, however, the focus is narrow and the items may not capture dimensions related to the context in which sexual behaviors occur.

Measurement of sexual experience, or past behaviors, may be the most crucial data collected for analysis, but it may also be the most difficult to obtain. As mentioned above, there is substantial difficulty associated with defining sexual activity. If the behavior in question is narrowly defined as penetrative sexual intercourse, it appears to be a more specific item to measure. However, the language used in phrasing the question, especially for non-interactive surveys, may have a large impact on the results obtained (Braun & Kitzinger, 2001). Phrases such as “having sex” may capture non-intercourse behaviors while “sexual intercourse” may be too clinical for some, especially younger respondents. The ambiguity that results from wording is a form of measurement bias that can affect the findings of any study of adolescent sexual behaviors. One strategy for avoiding this type of bias was proposed and evaluated by Michaud and colleagues (Michaud, Narring, & Ferron, 1999). These researchers used adolescent role playing observations to develop appropriate worded items for a national survey administered in Switzerland.

The lack of standardized instruments that have been extensively evaluated in various populations hinders both collection of new data and comparison of findings across studies. Few investigators provide detailed item descriptions for the instrument used for data collection. Therefore, when one investigator finds little relationship between religiosity and abstinence, for example, and another investigator finds a strong relationship, the conflicting results may be a function of measurement bias. If the constructs have been operationalized in substantively different ways, the study findings may be very different.

*Current Understanding of Stable Characteristics that Influence Abstinence
Demographic Correlates*

The majority of the population in Western societies, up to 80%, initiates sexual activity before leaving adolescence. Therefore, it is important to place the study of abstinence state change into the context of adolescent sexual behaviors. In an attempt to understand the socio-cultural factors that influence the decision-making process associated with abstinence state changes, many longitudinal and cross-sectional studies have been performed (Amuchastegui, 1999; Benson & Torpy, 1995; Byers & Heinlein, 1989; Christopher & Cate, 1985; Day, 1992; Ellen & Adler, 2001; French & Dishion, 2003; Gossman, Mathieu, Julien, & Chartrand, 2002; Gupta & Mahy, 2003; Haffner, 1995; Hawkins et al., 2002; Holowaty et al., 1997; Miller et al., 1997; O'Donnell et al., 2001; Padilla &

Baird, 1991; Raine et al., 1999; Rosenthal et al., 2001; Villarruel, 1998; Weiss, Whelan, & Gupta, 2000; Wu & Thomson, 2001). It is important to note that many of the published studies regarding adolescent sexual health come from shared data obtained during the Add Health study, a survey of teens in 7-12th grades conducted in 2 waves separated by approximately 1-2 years. Due to the analysis of this data by a number of investigators, the findings of this study may be over represented in the literature.

Unfortunately, due to the complexity of the factors that may play a role in the decision to change abstinence state, the data are difficult to analyze and compare across studies. As an illustration of this, consider the potential influence of race on adolescent abstinence. The culture in which an adolescent develops may be strongly influenced by race. This affects sexual development by influencing the sexual scripts that are seen as the norm within that culture. Sexual scripts in turn influence both the sexual self-esteem and agency of individuals. Although no studies have evaluated the effect of race and culture on sexual scripts in non-white populations, Stephens and Phillips (Stephens & Phillips, 2005) provide an excellent overview of the ways in which race may influence sexual norms and scripts at the cultural, intrapersonal and interpersonal levels.

Conflicting studies indicate that in statistical analyses race is (Hutchinson, 2002; Longmore, Manning, & Giordano, 2001; Rostosky et al., 2003; Wu & Thomson, 2001) or is not (Lammers, Ireland, Resnick, & Blum, 2000; Oman, Vesely, Kegler, McElroy, & Aspy, 2003) an important

determinant of sexual behaviors. However, the issue may be obscured by socio-economic status (SES) because of the economic disparities associated with race within the US. When parental education level is used as a surrogate for SES, some studies find that this factor is significant (Lammers et al., 2000; Rostosky et al., 2003) while others conclude that it is not (Longmore et al., 2001; Oman et al., 2003; Wu & Thomson, 2001). These studies simply illustrate the difficulty associated with attempting to isolate individual correlates of sexual behavior from the complex context within which these behaviors naturally occur.

Socio-cultural Correlates

In addition to demographic correlates to abstinence state changes in general, and sexual initiation in particular, there are numerous psychosocial and cultural factors that may influence adolescents' sexual behaviors. Some studies have analyzed an isolated factor, such as parenting style, related to sexual behaviors with the goal of developing an effective intervention. However, many studies have attempted to cover a broader spectrum of the influences and interactions of several socio-cultural factors. While this approach leads to difficulty pinpointing specific factors that have an impact on sexual behaviors, it is a more realistic attempt to understand the full complement of influences that may play a role in the ultimate decision to change abstinence states.

The social-cultural context of adolescent sexuality and abstinence includes the influence of families, peer networks and religion. In an attempt to model the impact of a variety of factors, Ramirez-Valles et al. (Ramirez-Valles, Zimmerman, & Newcomb, 1998) interviewed 850 urban high schools students. Structural equation modeling analysis revealed the complex interactions among race, family structure, parenting style, social class, neighborhood status and sexual behaviors. The results suggested that the influence of poor neighborhoods and involvement in social activities may be offsetting influences and that linear analysis of complex models may be insufficient to clearly define these complex interactions.

Oman and colleagues (Oman et al., 2003) evaluated a large group of adolescents in a cross-sectional study that attempted to measure the importance of familial and peer relationships as well as religiosity. In this large study of more than 1,200 youth, positive peer role-models, positive parental influence and religiosity were all associated with self-reported abstinence. The importance of these three factors appeared to vary in different age groups suggesting that interventions should be targeted to specific ages. However, the authors performed no statistical analysis for any of the comparisons so the meanings of the data are unclear.

Lefkowitz and colleagues (Lefkowitz, Boone, Au, & Sigman, 2003) found that religiosity was a factor in determining the extent to which mothers talked openly with their children about dating, sexuality and HIV/AIDS. However, they did not attempt to measure the effect of this

familial openness on adolescent sexual behavior. The study was important however in demonstrating the complexity of the interactions between factors that may influence a young woman's behaviors. Since religiosity impacted the level of openness in the familial relationship, it is important to keep that interaction effect in mind when analyzing the impact of either one of the factors. Although there are clearly interactions among the various types of influence, the strong influence of religious beliefs on virginity in Western societies deserves separate consideration from other types of social support such as parental and peer group influences.

Social Support

Religiosity There are many reports of the influence of religiosity on sexual behavior, including sexual debut, of adolescents (Bearman & Bruckner, 2001; Hardy & Raffaelli, 2003; Hawkins et al., 2002; Jones, Darroch, & Singh, 2005; Mahoney, 1980; Paul, Fitzjohn, Eberhart-Phillips, Herbison, & Dickson, 2000; Rostosky et al., 2003; Sheeran, Abrams, Abraham, & Spears, 1993; Villarruel, 1998; Watts, 1999; Woodroof, 1985). Religiosity is an area where there has been a great deal of conflicting reports. However, the studies related to this topic often have different outcome measures which may lead to some of the apparent lack of consensus regarding the impact of religiosity on sexual behaviors. Hawkins (Hawkins et al., 2002) found that adolescents' attitudes to virginity and abstinence were not correlated to age, gender or religiosity.

This study measured attitudes and did not attempt to measure sexual activity. By contrast, the study by Rostosky and colleagues (Rostosky et al., 2003) found that religiosity did affect age of coital debut. The studies differ in that the latter study did measure sexual initiation, not just attitudes and this may be an important glimpse into the significance of attitudes for predicting actual behaviors. In yet another conflicting study, youth in Canada did not differ in degree of religiosity based on virginity status (Holowaty et al., 1997). Perhaps the most telling finding from a study of a variety of psycho-social factors on sexual behaviors by Bachanas and colleagues (Bachanas et al., 2002) was the difference in impact of religiosity based on the age of the respondent. In younger teens, 12-15 years old, religiosity was not predictive of participation in high risk sexual behaviors. However, in older teens, aged 16-19, higher religiosity scores were associated with having fewer sex partners ($p < .03$). This difference in affect by age may explain apparent differences among the findings of other studies. This also emphasizes the importance of measuring states of abstinence and motivations for state changes since the factors that influence sexual debut may not be the same as those that affect later abstinence state change.

An extension of the effect of religiosity on sexual activity is the impact of virginity pledges. The practice of pledging to remain abstinent until marriage was promoted by the Southern Baptist Church and has grown to a national phenomenon. Although not a measure of religiosity,

pledge-related activities are predominately sponsored by groups with religious affiliations. From this perspective the effectiveness of pledges is a measure of the influence of religion and religiosity on adolescent sexual behaviors. Bearman and Bruckner (Bearman & Bruckner, 2001) analyzed the Add Health data set to determine the impact of pledges on abstinence and negative outcomes of sexual behaviors. A positive finding was that adolescents that participate in pledging had increased length of abstinence or delayed sexual initiation in the study sample. However, this finding varied by both the age and the social environment of the pledgers. Interestingly, for those who reported that sexually activity is not inherently a bad behavior, but were concerned about negative outcomes of that behavior, the study had an additional finding. Although pledgers were abstinent longer, and had fewer lifetime sex partners, after onset of sexual activity, they had higher rates of STI and pregnancy. The authors speculated that this may be the result of lower ability of pledgers to engage in safe sex practices than non-pledgers. The pledgers may have lacked the skills to negotiate condom use or may have felt that condom use violated their sense of trust in their partner. This study is an excellent example of the need to measure a number of aspects of sexual behavior and to incorporate biomarkers whenever possible.

Family Socio-cultural factors other than religion may influence adolescents' sexual behaviors. Family and peer relationships have been

studied and have been found to play a role in timing of onset of sexual activity. Several studies have suggested that parental involvement and communication play a role in increased length of abstinence (Calhoun-Davis & Friel, 2001; French & Dishion, 2003; Hutchinson, 2002; Lammers et al., 2000; Longmore et al., 2001; Raine et al., 1999; Rosenthal et al., 2001; Wu & Thomson, 2001). Although the generalizability of each of these studies may be restricted because of the difficulty in sampling a representative population, the preponderance of data, all suggesting that the parental relationship is an important factor, gives strength to the argument.

Peers Attitudes and perceptions of norms have been shown to be significant predictors of the age of sexual initiation by O'Donnell and colleagues (O'Donnell, Myint, O'Donnell, & Stueve, 2003). In a study of urban minority youth, a group with high rates of early sexual initiation, attitudes and norms were found to be the factors that best predicted early sexual debut. The authors suggest that this indicates the importance of both school and parental interventions at early ages in an effort to affect these attitudes and establish appropriate norms. Similar findings have been reported by other studies (Cavanagh, 2004; Holland et al., 2000; Kinsman & Romer, 1999; Tolman, 2006) lending weight to the generalizability of the conclusion that peer norms are an important determinant of abstinence states.

Peer groups are a component of the social experience that helps adolescents develop norms and attitudes regarding a variety of lifestyle factors including sexual behaviors (Connolly, Furman, & Konarski, 2000; Kinsman & Romer, 1999). Zimmer-Gembeck and colleagues developed a model which included both physical characteristics and peer relationship qualities (Zimmer-Gembeck, Siebenbruner, & Collins, 2004). In this study of 155 young men and women, friendship quality predicted age of first romantic relationship, which in turn predicted alcohol use which then predicted number of lifetime sex partners. Interestingly, there was no direct relationship between number of lifetime sex partners and friendship quality or age at first romantic relationship. This study clearly demonstrates the complexity of the relationships between the constructs that may influence sexual decision-making.

These complex relationships are further confounded by the changing nature, and relative influence on behaviors, of relationships during adolescence (Galliher, Welsh, Rostosky, & Kawaguchi, 2004; O'Sullivan et al., 2000). Kuttler et al., studied these relationships in 446 adolescent girls by applying Social Exchange Theory to assess the influence of peers compared to romantic partners in Florida high school attendees. The investigators hypothesized that (a) peer group structure and composition would be related to dating practices, and (b) positive and negative interactions would vary by age and type of relationship (best friend versus partner). In this study, girls in any dating relationship

belonged to larger peer groups than non-daters and girls in serious relationships belonged to groups with more dating couples than casual or non-daters. Girls in serious relationships had less positive support from friends; however, they had lower levels of conflict with friends. This represents a shift in terms of support from best friend to partner as relationships become more serious. This change was affected by age such that older girls had a larger difference between peer and dating support features than younger girls for whom the two types of relationship provided similar levels of support. The data suggest that the influence of peers decreases both with age and with intensity of dating relationships. Therefore, peer-driven influences on sexual norms and behaviors are likely to be most important at younger ages.

Self-esteem and Self-efficacy

The susceptibility to peer influences may depend on self-esteem and self-efficacy. The former may dictate the magnitude of peer influence while the latter may be related to the ability to avoid confirmation to group norms that conflict with personal choices. These constructs have been evaluated in the context of adolescent sexuality in general as well as that of virginity and abstinence (Buzwell & Rosenthal, 1996; Christopher & Cate, 1985; Ellen & Adler, 2001; Fergus & Zimmerman, 2005; Goodson, Buhi, & Dunsmore, 2006; Langer & Zimmerman, 1995; Nagy, Watts, & Nagy, 2002; Robinson & Frank, 1994; Schechterman & Hutchinson, 1991; A. M.

A. Smith, 1998; Young, Denny, & Spear, 1999). These studies suggest that self-esteem is important to an adolescent's desire to postpone sexual onset and self-efficacy is related to the ability to act on that desire. Self-efficacy and self-esteem may both be enhanced by parenting style and social support suggesting a reciprocal relationship between these dimensions.

Modeling of resilience as a method for understanding the positive, normative development of healthy lifestyles provides a possible explanation for this reciprocal relationship (Fergus & Zimmerman, 2005). In this model, exposure to moderate levels of risk allow individuals to develop the skills necessary to cope effectively with risk experienced in daily living (i.e. peer pressure to engage in sexual activity). However, individuals who are over-protected may not have developed self-protective skills and individuals constantly at high risk may never have an opportunity to avoid it. Using this model, self-esteem and self-efficacy can be developed through experiences that challenge an adolescent's desires and allow the enactment of choice. These findings were confirmed by a study of sexual possibility situations conducted by DiIorio and colleagues (DiIorio, Dudley, Soet, & McCarty, 2004) which showed that self-efficacy and self-concept were protective factors enabling healthy sexual decisions.

Self-esteem and self-efficacy are inextricably linked and both must be developed in order for adolescents to develop sexual agency. In a review of the current literature, Goodson and colleagues (Goodson et al., 2006) demonstrated that although self-esteem is clearly associated with

sexual behavioral *intentions*, no consistent link to sexual *behaviors* could be shown. This suggests that self-efficacy may be necessary for development of the ability to act on the choices (intentions) that are desirable to adolescents. This may be particularly salient for young women who are affected by the sexual scripts that result in silencing of female desires, whether the desire is to engage in sexual activity or to remain abstinent. It is clear that these constructs must be included into an analysis of abstinence in order to understand the decision-making process.

Interventions Attempted

Interventions, especially those targeted for use in educational settings, have been evaluated in both cross-sectional and longitudinal analyses. Programs have been designed to encourage either delaying sexual initiation or maintaining abstinence regardless of the previous level of sexual activity of the participants. Interventions aimed at reducing risky sexual behaviors, such as numbers of partners or unprotected coitus will not be discussed. While these may be useful programs, the focus of the intervention must be substantively different from abstinence programs and may therefore lend confusion to an already conflicting field of study.

Interventions have been designed predominately for application to health education in schools. In a review of over 300 studies of programs aimed at reducing risk of teen pregnancy, Kirby (Kirby, 2001a) found only three studies of abstinence programs that were conducted with sufficient

rigor to be included in his meta-analysis. None of the studies provided sufficient evidence to demonstrate that abstinence programs have an impact on adolescent sexual behaviors. Programs other than abstinence-based education have also shown weak or mixed responses. Despite the scientific shortcomings of evaluations of interventions and the lack of demonstrable, sustainable effects, the belief that abstinence and other programs are effective is widespread (Pinkerton, 2001; Rector, 2002).

School-based Sexuality Education

School-based sexuality education is the topic of a great deal of analysis; however, evaluations are often not possible in a rigorous fashion due to the lack of control groups. Many of the curricula currently in use do not meet the stated goals of the government programs, often provide misleading and/or inaccurate information, and are moralistic in nature and design (Goodson & Edmundson, 1994; Santelli, Ott, Lyon, Rogers, Summers et al., 2006; Wilson et al., 2005). These factors may lead to ineffectiveness in protecting the long-term sexual and reproductive health of America's youth (Sather & Zinn, 2002) and in fact have been condemned by the Society for Adolescent Medicine on the basis of violation of the Human Rights of adolescents (Santelli, Ott, Lyon, Rogers, & Summers, 2006)

Sex Can Wait (Denny et al., 2002), a commercially available curriculum, was shown by Denny to have variable effects depending on the

level to which the program was applied with younger children benefiting less from the intervention than older children. Some changes in knowledge and attitude were measured for some age groups. However, there was no difference between the percent of students that reported sexual activity post-test. This is consistent with the premise that knowledge and attitudes may not be sufficient predictors of sexual behaviors as mentioned above. These findings were in direct contrast with findings by O'Donnell (O'Donnell et al., 2002) where younger children were the better target group for long-lasting effects of different intervention program. A significant difference between the two studies, in addition to the actual intervention, was the length of follow-up. While the Denny study evaluated children after 1-2 months, the O'Donnell study followed youth up to 4 years after the intervention period. This suggests that for younger children, who may engage in few sexual behaviors, lengthy follow-up may be necessary in order to have sufficient power to detect any intervention effect. Differences in impact as a result of the target population are common, and often inconsistent across studies (Aarons et al., 2000; Frost & Darroch-Forrest, 1995; Jemmott & Jemmott, 2000; Rector, 2002; Silva, 2002). These inconsistencies underscore the need for a better understanding of the factors that influence adolescent sexual behaviors, particularly onset of sexual activity.

Virginity Pledges

One of the most common interventions attempted outside the classroom setting has been the virginity pledge. As mentioned above, the pledge can be taken by those who have never been sexually active, or by those willing to change abstinence states and forego any sexual activity from this point forward, until marriage. However, the Add Health data does not support the effectiveness of these formal pledges (Bearman & Bruckner, 2001; Bersamin, Walker, Waiters, Fisher, & Grube, 2005; Bruckner & Bearman, 2005). Interestingly, one of the effects of pledging may be an increase in the social desirability bias that leads to underreporting of sexual activities (Rosenbaum, 2006). In this analysis of pledgers and subsequent abstinent state change, investigators found that pledgers often retracted previously reported sexual activities and sexually active youth often retracted reports of having taken pledges. These data suggests that when evaluating this type of intervention, great care should be taken in analyzing and interpreting the findings.

Shortcomings of Interventions Attempted

Federal mandates have pushed publicly funded school systems to present abstinence-only curricula and this has in turn influenced many of the intervention trials in the US. Unfortunately, little empirical data exists to support this type of program. Changes measured, if any, are often of short duration or applicable only to specific sub-populations. A

comparison of school-based sexuality education in the Netherlands, France, Australia and the United States (Weaver, Smith, & Kippax, 2005) used health outcomes to demonstrate that the current policies have not resulted in improved long-term reproductive health for young women in the US. Although a greater percentage of US adolescents used condoms at first intercourse, the age at first coitus was lower and overall contraceptive use was lower in this country. Additionally, the STD and HIV prevalence rates in the US were consistently 5-50 fold higher in the US than in other countries studied. These data were supported by a similar analysis conducted in the Netherlands, Germany, France and the US (Berne & Huberman, 2000). These findings suggest that the fear-based interventions attempted in this country are not effective.

This conclusion is supported by the systematic review of abstinence programs in the US by Bennett and colleagues (Bennett & Assefi, 2005). In this analysis, abstinence-only programs demonstrated an increase in the age at first intercourse (in some studies), but no reduction in frequency of intercourse or numbers of partners. Abstinence-plus programs that focus on abstinence, but also cover contraception and STI information, also showed an increase in age at coital debut, but added to that decreases in frequency of coitus. Neither type of program demonstrated significant reductions in the numbers of partners.

Perhaps the most important problem with the current focus on sexuality education and abstinence interventions is the resulting damage

that may be done to the developing sexual identities of youth. Assumptions concerning gender identity and the value of becoming a parent are based on heterosexual, middle-class norms that may be inapplicable to the populations being targeted by these programs. Many programs are designed with the underlying intention of “guiding” youth into a sexual identity that is considered acceptable by a patriarchal society (Bay-Cheng, 2003). Ignoring the sexual developmental trajectory of individuals and the diversity associated with those trajectories may be a large part of the reason that abstinence programs and interventions have largely failed in this country. Abstinence must be considered in the numerous contexts in which sexual decision-making occurs.

Interpersonal Context of Abstinence

Many studies have considered the interpersonal context in which sexual behaviors occur. Studies have reported that sexual or dating partners are important in the decisions to engage in sexual activity, use condoms, or use other contraceptive methods (Free & Ogden, 2005; Haglund, 2006). However, it is important to recognize the difference between dating, or romantic, and sexual partners. While these are often the same, there are many instances in which this is not the case. In an analysis of the Add Health data from Wave II, Manning et al. (Manning, Longmore, & Giordano, 2005), attempted to define the differential behaviors associated with partners reported as romantic versus non-romantic. This

self-reported data may be somewhat difficult to interpret as this definition then relies on the beliefs of the respondent, but at least this study begins to evaluate the effect of relationship quality. The study found that nearly one quarter of sexually active respondents had sex with only non-romantic partners, 14% had sex with both romantic and non-romantic partners. Thus, nearly one third of respondents engaged in sexual activity with a non-romantic partner. Unfortunately, these data were not broken down into gender so it is difficult to know if the proportion of those engaging in sexual behaviors with more casual partners were more likely to be male as might be predicted based on this country's sexual double standard. However, the authors did report only a limited gender effect in multivariate analysis of the predictors of sex with more casual partners. It is critical to consider this analysis in the context of the limited definition of "partners". The lack of a clear definition of this construct is hampered by a limited understanding of the meaning adolescents ascribe to this term.

Personality Systems

In order to better understand sexual decision-making processes, it is perhaps necessary to consider broader personality systems as described in the psychology literature. One of the current themes in the psychology of personality systems concerns contextualism: the inclusion of the situational environment and its interaction with stable personality characteristics in understanding behaviors and decision-making processes (Kammrath,

Mendoza-Denton, & Mischel, 2005; Mendoza-Denton, Ayduk, Mischel, Shoda, & Testa, 2001; Mischel, 2004; Mischel & Shoda, 1995, 1998; Shoda & Mischel, 2000; Shoda & Mischel, 2006). In this field, an apparent inconsistency was described between the postulated stability of personality types and the variability measured in behaviors. Stable personality theory predicted that an individual should always make the same behavioral choices (e.g. be abstinent). However, behaviors appear to vary within individuals. Mischel and Shoda (Mischel & Shoda, 1995) described a unifying theory called the Cognitive-Affective Personality System (CAPS) Theory which reconciles this apparent dichotomy. They postulated that individuals have stable personality characteristics, many of which are influenced by the environment of the individual during development, but the decision-making path is influenced by the context of the event. The authors referred to this as a stable, predictable, if...then... person x situation interaction. According to CAPS theory, individuals have a personality signature that suggests a specific response in a given situation. Interestingly, this model may explain data that demonstrate discordance between measures of behaviors and attitudes, beliefs or intentions. Mischel and Shoda (Mischel & Shoda, 1995) found that self-perceived internal consistency of personality traits (e.g. “I am always conscientious”) was not related to actual behavioral consistency. Thus study participants might respond positively regarding abstinence intentions, but may actually be engaging in sexual behaviors.

Since the proposal of this theory, studies have confirmed the utility of the CAPS model for predicting aggressiveness in a variety of situations (Mischel & Shoda, 1995, 1998), encoding of social perceptions (Mendoza-Denton et al., 2001), social warmth/friendliness (Kammrath et al., 2005), and breast self-exam behavior (Shoda & Mischel, 2006). This theory has not yet been applied to sexual behaviors that are expected to vary depending on the interaction between the personality of the participants and the situational elements. Mischel (Mischel, 2004) does describe the scenario where another person comprises the “situation” and suggests that modeling and predicting behaviors within a dyadic context should be possible. Therefore, abstinence research should benefit from the consideration of abstinence state from a partner-specific perspective and measurement of relationship factors that play a role in influencing sexual behaviors.

Relationship Factors

The majority of studies that have evaluated adolescent relationships and sexual behaviors, have done so from the perspective of prevention of negative outcomes such as unwanted pregnancy and STI (Ellen, Cahn, Eyre, & Boyer, 1996; Kaestle & Halpern, 2005b; Santelli et al., 1996; L. A. Smith, 2003). In these studies, the effect of partners has consistently been an important factor. However, the influence of partners appears to vary by gender, in part due to the gender difference in social construction of gender

and internalized sexual scripts (Davis, Shaver, & Vernon, 2003; Eyre et al., 1998; Eyre, Read, & Millstein, 1997; Impett & Peplau, 2003). Understanding the meaning of relationships from these various perspectives is necessary if we are to understand the influence of relationships on sexual decision-making in adolescents.

In a study of youth aged 11-14 years, Cooksey et al. (Cooksey, Mott, & Neubauer, 2003) found that the type of relationship, friend or dating, and the age difference among the peers resulted in varying degrees of risk of early sexual initiation. Young women with older friends were at elevated risk. This has also been reported by Miller and colleagues (Miller et al., 1997) along with increased risk of unwanted pregnancy in this group. In the Cooksey study, young women who reported rarely dating were also more likely to be younger at sexual initiation. While this finding may not be intuitive, it may be a reflection of dating relationship quality where steady dating partners were more respectful of young women's desire to delay sexual onset. Alternatively, women without steady partners may have lower self-esteem and therefore use sexual behaviors in exchange for acceptance in a social group (Lichtenstein, 2000). Either, or both, of these explanations could fit the data presented and demonstrate the gap in understanding of the motives and influences that affect adolescent sexual behavior, particularly within the context of dating relationships.

Cleveland (Cleveland, 2003) followed adolescents over time to determine the factors related to sexual activity within dating relationships.

This is one of the few longitudinal studies of adolescent sexual behavior in the context of dyads. The study was a sub analysis of Add Health data that had measurements at 2 time-points, approximately 1 year apart. The study found that individual factors at the onset of the relationship had the most influence on whether a couple became sexually involved. Factors associated with sexual activity included school delinquency and substance use, but also included the adolescents' perceptions regarding the pros and cons of sexual activity. This suggests that parental and peer influence on sexual attitudes may play a role in the decision to remain sexually abstinent. This is a landmark study because of its focus on sexual behaviors within adolescent couples. However, the lengthy period between the two measurements makes interpretation difficult. The authors evaluated only the results of couples that were together at both time points threatening the generalizability of the findings to a broader population of adolescents. Indeed, potentially interesting data regarding behaviors associated with changing partners was lost by restricting the analysis in this way. During mid-adolescence, relationship turnover often occurs every 3-6 months suggesting that the couples studied by this group were more committed than the average couple in this age range.

Romantic relationships In an excellent qualitative study of the sexual decision-making process, Michels et al., (Michels, Kropp, Eyre, & Halpern-Felsher, 2005) interviewed young women to elicit the reasons

behind current abstinence states. The study identified relationship factors (e.g. length and quality) and personal characteristics (e.g. attitudes and norms) as factors that described the context, a main component in the decision-making model. Since this was a qualitative project, the specific relationship factors were variable and only the construct itself could be described as belonging in the model. This emphasizes the need for additional information that may better describe those components of this construct that affect the decision to remain or become abstinent.

As mentioned above, research evaluating relationships and sexual behaviors is fraught with difficulty due to the variability of meaning individuals ascribe to the various terms used to describe partners. This is particularly salient for abstinence research when trying to understand those relationship qualities that may support abstinent behavior since in these cases, partners are not *sexual* partners. Therefore we are left with the problematic classifications of partners as “casual”, “serious”, “romantic”, “friends”, “boyfriends”, etc. Since these terms are socially constructed, attempting to determine the factors that influence sexual behaviors using these classifications may lead to conflicting findings across populations. This caveat should be understood when considering any of the literature currently available.

The Add Health study, which has made substantial contributions to this field, provides an excellent example. Adolescents were asked to describe sexual behaviors with romantic partners (Kaestle & Halpern,

2005a). Interpreting the finding of these analyses is therefore dependent on understanding the meaning the respondents attribute to this definition. It is likely that the designation of a partner may change as abstinence state changes. For example, young women may feel compelled to describe a sexual partner as a romantic partner in order to fulfill the social norm of only engaging in sexual activity with a committed partner. In the analysis reported by Kaestle and Halpern, (Kaestle & Halpern, 2005a), the authors attempted to refine the meaning of the romantic partners by assessing the status of the partner before the romantic relationship began. The study concluded those romantic relationships that began as friendships, rather than those that began as acquaintances or had no prior history, were more often associated with abstinence.

Additionally, the meaning of “quality of relationships” is derived using different cues for female members of couple than male partners (Galliher et al., 2004). Galliher and colleagues found that for young women, self-reported relationship quality was statistically associated with women’s perception of their boyfriend’s behaviors while young men’s self-reports were associated with their own behavior. This supports the supposition of Feminist Theory that women are expected to define their relationship success by the level of satisfaction of their partner as a result of socially constructed gender roles. This type of difference in the gendered dynamics of relationships makes the study of relationship quality difficult.

Rosenthal and colleagues (Rosenthal, Burklow, Lewis, Succop, & Biro, 1997) attempted to further explore the impact of relationship quality as it related to sexual activity within that relationship. Interviews of 174 adolescent women collected data about relationships based on communication; time spent together, perceived exclusivity, anticipated longevity, and satisfaction. As might be expected, sexually active young women reported high levels of communication; greater amounts of time spent with their partners, and longer anticipated longevity of the relationships. However, there were no differences in perceived exclusivity or in relationship satisfaction between sexually experienced and inexperienced young women. Intimate communication, which may be a marker for trust, and time spent together might be indications of the features of a relationship necessary for sexual activity to be acceptable to young women, or might represent shared (sexual) activities that enhance closeness. Understanding the direction of such relationships is critical to understanding the factors that precipitate abstinence state changes within relationships.

To attempt to further understand the effects of intimacy and self-disclosure, Rostosky et al., (Rostosky et al., 2000) assessed relationship quality using a video-recall procedure. In this study, couples were taped while engaging in conversations related to provided scenarios. Participants then rated both their own and their partner's behaviors. The most interesting finding of this study was that perceptions of supportive

behaviors were associated with self-reported non-intimate behaviors such as hand-holding. Higher self-reported relationship quality was also associated with increased likelihood of non-coital behaviors. Interestingly, couples with higher scores on conflict scales reported more coital behaviors and oral sex. Most interesting was the conflicting self-report of the reason for sex which was most commonly attributed to feelings of love, not conflict. The authors suggested that this may be the result of using more intimate behaviors as a conflict resolution mechanism. This interpretation is supported by data suggesting that adolescents use sexual behaviors, in this study oral sex, as a mechanism for strengthening relationships (Cornell & Halpern-Felsher, 2006). Finally, the Rostosky study also evaluated relationship longevity one year post-survey. The relationship quality construct of intimacy was more predictive of longevity than occurrence of intercourse in this population. While this study offers intriguing glimpses into the dyadic factors that influence relationships, it also demonstrates the gaps in current knowledge of relationships and their influence on abstinence states. This data may capture women's suppression of reporting desire in response to social expectations of femininity.

The study by Rostosky et al. (Rostosky et al., 2000), described one of the primary motivations for intercourse as being in love. The study of 174 young women by Rosenthal and colleagues (Rosenthal et al., 1997) reported the most common reason for coitus as physical attraction to a partner. This was reported for both first coitus and most recent, suggesting

that this is a consistent motivation factor. In this study 48% of young women reported physical attraction (desire) as the motivating factor for most recent intercourse whereas 33% reported feelings of love (multiple responses were acceptable and therefore the reasons were not mutually exclusive). These data suggest the need for additional research of sexual behaviors within relationships and the role of desire and sexual motivations.

Desire Sexual desire is clearly a factor that motivates sexual behaviors; however this construct has rarely been studied in adolescents, particularly in young women. When adolescent sexual desire is studied, it is often from a physiological perspective (Conaglen, 2004; Pfaus, 1999). An interesting review of the literature available on behavioral aspect of this topic has been provided by Impett and Peplau (Impett & Peplau, 2003). The focus of the review was sexual compliance: acquiescence to unwanted sex. Although several theories to explain gender differences in the frequency of sexual compliance were discussed, including biological differences, the authors suggest that social construction of gender roles, sexual scripts, and gendered power inequities all contribute the observed differentials. One conclusion that can be drawn is that these social influences that may lead to sexual compliance may also lead to low levels of sexual agency and silencing of sexual desires in women. This may be supported by the work of Eyre and Millstein (Eyre & Millstein, 1999) who

used domain analysis to measure antecedents of sex in Black and White adolescent men and women. They reported that only males rated sexual arousal as a reason for engaging in sexual behaviors. However, the degree of social bias in the response patterns is unclear. Our society clearly conditions young women to view their sexual role as that of gate-keepers and therefore discourages acknowledgement of arousal or desire. This social construction of femininity may very well result in the findings reported here as women may be silencing the expression of desire. Disentangling the reality of desire from the social construction of gender roles and sexual script theory is clearly warranted, but obviously difficult to achieve.

The bulk of our understanding of adolescent women's sexual desire, from a non-physiological perspective, comes from Deborah Tolman's work (Tolman, 1994, 2005; Tolman & Szalacha, 1999). Tolman's research is conducted within the theoretical framework of Feminist Theory and Social Constructionism. She has performed ethnographic interviews with young women and applied both qualitative and quantitative analytic methods to the analysis of data collected (Tolman & Szalacha, 1999). The basic tenet of her research in this area is that female sexuality and desire are actively oppressed in patriarchal societies via social construction of gender roles and this leads to loss of sexual agency in women. Findings from her interviews of both urban and suburban adolescent women suggest that young women recognize their own desire, but are constrained in their

response by factors specific to their social environment (Tolman, 1994). For example, urban women respond to their desire with caution and recognize their vulnerability to negative outcomes. In contrast, suburban young women respond with curiosity; however, they are silenced by the social construction of femininity. Sexual history, measured in this study as exposure to sexual abuse, may also play a role in an individual's response to desire (Tolman & Szalacha, 1999). Tolman calls for consideration of women's desire, from the perspective of normative development, in adolescent research as an essential mechanism for overcoming the current oppression of female sexuality which is a primary tool for overall oppression of women in society (Tolman, 2005).

Understanding desire as a normative aspect of sexual development is critical to understand the sexual decision-making process. Desire occurs in the context of a specific partner as well as a specific place and time. Whether or not desire is acted upon depends on additional situational factors including sexual scripts derived from a young woman's culture.

Theoretical and Conceptual Frameworks

Theories Applied to Previous Research

Models and theories developed for use in education and other fields have been applied to the study of adolescent sexuality and abstinence (Byers & Heinlein, 1989; Eisen, Zellman, & McAlister, 1992; Rodgers, Rowe, & Buster, 1998; Schechterman & Hutchinson, 1991).

Evolutionary-based theories have been used to predict factors related to onset of sexual activity (Belsky, Steinberg, & Draper, 1991). Cleveland and colleagues (Cleveland, 2003) used these theories to select factors of interest for evaluation of intercourse within adolescent couples. The theories propose that certain evolutionary advantages may be gained by early or delayed onset of sexual activity depending on the environmental circumstances. The authors suggest that in some social environments, there may be an advantage to quantity of sex rather than quality.

Hulton (Hulton, 2001) evaluated the Transtheoretical Model of Change in the context of abstinence in adolescence. The study included abstinent and sexually active young women. The author found that as young women moved through the stages of change, the perception of the weight of pros and cons associated with sex underwent a change as well. Abstinent women not yet contemplating sexual activity described the cons as more significant than the pros. As these women moved into the contemplation stage, and at later stages, the pros of sexual activity were rated higher than the cons. The model was very useful in predicting sexual activity if the individuals were placed in the correct stage for analysis. This study suggests that this model could be effectively incorporated into intervention evaluations, if done rigorously. However, it is critical to consider the dyadic nature of the state of abstinence and the stages would have to be evaluated on a partner-specific basis.

Social Learning Theory was used as the conceptual framework for an analysis of the relationship between social skills and “problem” sexual behaviors (Nangle & Hansen, 1998). The study concluded that normative development of adolescent sexuality was hampered by the lack of direct learning processes and restrictive indirect learning opportunities as a result of the sexual mores in the US. However, the focus on problem-solving skills as necessary for controlling sexual behaviors continues to drive research from a non-normative perspective of adolescent sexuality.

It is critical to the field of adolescent sexual research to redirect focus away from a problem-based/negative outcomes perspective and attempt to understand adolescent sexual behaviors in the context of normative development (Tolman, Striepe, & Harmon, 2003; Welsh et al., 1999). As a result of the burden of negative outcomes falling predominately on women, and the traditional roles of women as sexual gate-keepers, it is particularly salient to adopt this perspective for research involving adolescent women. Welsh et al., (Welsh et al., 1999) describe the use of a normative developmental framework as critical to understanding the differences in meaning that are attributed to sexual behaviors at during different stages of adolescence. For example, the motivations for engaging in sexual activities may be to acquire “mature” status among peers for younger adolescents while for older girls the motivation may be romantic involvement and commitment. When placing adolescent sexuality research in the context of normative development, the

recurrent theme of Feminist Theory occurs throughout the literature. This is particularly relevant to adolescent women's sexual decision-making within the context of specific relationships. Feminist Theory includes aspects of Social Constructionism and Sexual Script Theory and is the most appropriate framework within which to conceptualize the interaction of relationships and states of abstinence.

Constructionist and Sexual Script perspectives

Social Constructionism Theory posits that meaning is created by a culture or group. This can be applied to the meaning attributed to ideas, objects and experiences. In the context of sexual behaviors, concepts such as virginity and abstinence are socially constructed as they have different meanings in different settings as previously discussed. Gender itself is a socially constructed concept in that attributes are assigned to male and female identities by the culture in which individuals exist. An extension of this assignment of gender is the construction of gender roles. Gender roles dictate the acceptable behaviors for males and females in specific situations (Tolman et al., 2003). Gender roles are internalized during early developmental stages by experiences such as observations of family interactions, receiving gendered toys as gifts, being assigned gendered household chores, and gendered scholastic expectations (e.g. Matel's Barbie® saying "Math is hard"). As a result of gendered roles, women in Western societies are expected to be nurturers and place the needs of others

before their own needs. Women are not expected to express sexual desire or initiate sexual activities; they are expected to act as sexual gate-keepers (Tolman & Diamond, 2001). When women fail to adhere to these expectations, they are often labeled as promiscuous and accused of engaging in problem, or high-risk, behaviors.

During the sexual development of adolescent women, the influences of socially constructed gender roles affect the development of the sexual scripts (Stephens & Phillips, 2005) that these women will use throughout this developmental period and often into adulthood. Sexual Script Theory describes the phenomenon of internal “scripts” that individuals enact in specific settings, in this case related to sexual behaviors (Simon & Gagnon, 1984). For example, women being pressured to engage in unwanted sexual activities may use scripts such as, “I am not using any birth control” as a mechanism for extricating themselves from the situation. Kornreich and colleagues describe the influence of siblings in development of gender roles (Kornreich, Hearn, Rodriguez, & O'Sullivan, 2003). They found that, as would be predicted by Sexual Script Theory, girls with older brothers, as opposed to girls with older sisters or no older siblings, strongly endorsed women’s role as child-bearers and reported lower responsivity to sexual cues. The presence of older sisters did not result in less endorsement of traditional gender roles.

Feminist Principles Framework

Feminist Theory attempts to understand the phenomena that influence women's realities as a result of sociocultural patriarchy. In the case of sexual behaviors, the feminist perspective insists that researchers do not base assumptions on socially constructed gender roles and attempt to understand the influences of these social constructions (e.g. in the development of sexual scripts). Research performed within this framework should not make assumptions regarding the gendered meaning of behaviors. For example, research involving women's motivation for intercourse should not assume that coitus is used to solidify relationships rather than to achieve sexual pleasure. Instead, we should attempt to learn the actual motivations and how those motivations change in response to different situations and partners. Tolman (Tolman, 1999) describes a model of female adolescent sexual health that incorporates the difficulties developing adolescent women face in overcoming the socially constructed gender roles. Endorsement of feminine ideology (behaving in socially acceptable feminine roles such as nurturer and sexual gate-keeper) is related to poor sexual and mental health (Impett, Schooler, & Tolman, 2006; Tolman, 1999; Tolman et al., 2006; Tolman & Porche, 2000). Therefore, in order to identify methods to improve young women's sexual health, a feminist perspective should be applied to understanding sexual behaviors including abstinence behaviors.

Summary

Understanding the factors that influence the decision to become sexually active is important for improving the sexual health and development of adolescents and young adults. However, since defining sex, virginity and abstinence is complicated by social influences and personal perceptions, this aspect of adolescent sexuality is poorly understood and difficult to study. The measures that have been described suffer from social desirability bias and other measurement biases. Thus our understanding of the significant influences on onset of sexual activity is inadequate. Another difficulty that is clear from the review of the literature is the multi-faceted context of adolescent sexuality which is critical to understanding the multiple, interacting influences on sexual behaviors including abstinence state changes. Several studies have attempted to describe and measure the impact of such socio-cultural influences as family, peer norms, racial and ethnic cultures, and religiosity on sexual behaviors. However, these studies were rarely longitudinal in design thus not able to measure changes over time as youth move through mid-adolescence and into late adolescence. More importantly, few studies have evaluated the factors that may influence sexual decision making in a partner-specific context. It is clear that individual's make such decisions based on the interaction of stable personality characteristics (such as religiosity and self-esteem) and situational factors (such as relationship qualities and sexual desire). These interactions have not been studied in the

context of specific sexual partners, but rather global assessments have been made regarding an individual's likelihood of sexual activity. Finally, abstinence is too often viewed as a dichotomous state in an individual. However, a person who is sexually active with one partner, may be sexually abstinent with other partners even though the opportunity to be sexually active is present. Understanding the differences in abstinence states on a partner-specific level would enhance our understanding of the motivations for state change.

Given the limited understanding of the motivations for changes in abstinence states, developing successful interventions has proven difficult. Most interventions focused on abstinence have relied on school-based curricula and few have been rigorously evaluated with long-term follow-up. A better understanding of the factors that influence sexual behaviors of adolescents in the context of specific relationships could be of importance to the development of programs specifically designed to encourage healthy sexual development and, when appropriate, abstinence.

Developing a model of the factors that influence sexual behaviors has proven difficult and attempts to apply pre-existing theoretical frameworks to predicting sexual activities have had limited success. Research performed within the framework of the feminist perspective may improve our understanding in this area. Placing this research into the context of partner-specific behaviors suggests that this work should be guided by the concept of personality x situation interactions. Therefore,

inclusion of relationship-related measures as well as personality characteristics from a feminist perspective is critical to understanding sexual decision-making processes and healthy sexual development of adolescent women.

Chapter 3

METHODOLOGY

The focus of the study was on the individual and contextual factors that influence the probability of a change in partner-specific abstinence states of young women. Specifically, the study attempted to determine if the quality of partner-specific relationships is predictive of the probability of state change in young women. Performance of the study was organized as follows: (a) arrangements for conducting the study; (b) selection of participants; (c) development of instruments; (d) design of the study; (e) data collection procedures; and (f) treatment of the data.

Arrangements for Conducting the Study

The study recruited women attending one of three Marion County Health Department (MCHD) community clinics and study visits were conducted at these sites. The MCHD community clinics are located in urban Indianapolis and serve a predominately underinsured inner-city population. Similar populations have been described as being at increased risk for STI and unwanted pregnancy. Prior to study initiation, discussions were held with the administrators of the three clinics to obtain permission to approach MCHD clinic clients and to arrange for clinical space in each clinic 1-2 days per week. The MCHD community clinics each hold specialized clinics for ½ day periods throughout the business week. For

example, one community clinic may hold Adolescent Clinic on Tuesday afternoons, Family Planning Clinic on Wednesday mornings and OB/GYN Clinic on Thursday mornings. Each clinical facility has its own schedule for each of the main clinics and these clinics are staffed by separate personnel. The three facilities used for this study were chosen based on availability of space during the Adolescent Clinic period and the approval of the facility administrators. Previous studies have been performed in these community clinics and sufficient numbers of women in the target age range attend to allow adequate access to the population of interest.

Following approval by the facility administrators, the clinic staff was approached and the study goals and logistics were explained. Although the clinic staff were not expected to perform any study specific protocols, it was critical that they understand the project and interact with study staff to identify eligible clinic attendees and meet any healthcare needs of the study participants that fell outside the scope of the study. The nursing supervisor was fully informed of all study procedures in order to fully integrate the healthcare services provided as part of the study and the routine services offered by the clinic.

The study protocol was reviewed and approved by the Institutional Review Board of the Indiana University School of Medicine and the Human Subjects Protection Committee of the MCHD. Although these approvals were sufficient to allow the study to proceed, because of the sensitive nature of the research and the age of the target population, the

study protocol was also submitted to an independent, external bioethics committee for review. Approval of the protocol was received from this group as well. A community advisory board (CAB) was created with members from the participating clinics and the communities which they serve. The purpose of the CAB was to create a mechanism for keeping the community informed regarding the goals and the progress of the study. This was particularly important as home-visits were made many times during the course of the follow-up period.

Selection of Participants

Women 14-17 years of age were the target population because of the level of STI and pregnancy risk in this group of young people. It was expected that some of the subjects in this age range would not yet be sexually active since the national median age of sexual initiation is 16. Therefore, targeting this population allowed the study to include both sexually active and inactive young women for whom developing public health interventions aimed at improving reproductive and sexual health has been a national priority.

In order to avoid obtaining data from only the subpopulation of sexually active women seeking sexual healthcare for suspected STI, the target population was any young women attending the Adolescent Clinic held at each of the three MCHD community clinic sites once per week. The Adolescent Clinics offer primary healthcare to people 14-21 years of

age for most ambulatory healthcare needs. The focus of these clinics is not specifically sexual or reproductive health although those services are offered when appropriate.

Eligibility criteria included attending one of the three clinical study sites, being 14-17 years old and being able to speak and read English. Participant referral was a common means of identifying potential new participants. However, the referred participants were still required to attend one of the clinic sites in order to enroll in the project. There were no exclusion criteria other than age and English speaking capability. Women in the appropriate age range were approached by trained study personnel and the study was explained. Parental permission was obtained for all women who had given consent to participate in the study.

Development of the Instruments

Two instruments were used to collect data in this study: a self-completed questionnaire (Appendix C) administered annually and a directed interview administered quarterly (Appendix D). Both instruments were on scannable forms to facilitate data entry. Items on each instrument were adapted from previously described instruments (Fortenberry, Brizendine, Katz, & Orr, 2002; Sayegh, Fortenberry, Anderson, & Orr, 2005), or were developed specifically for this study. Face and content validity were established by review of the instruments by colleagues who are experts in the field of adolescent sexual behaviors.

Factor analysis was used to group individual items into scales for which scores were developed. The interview contained 10 items which are related to relationship quality, however, based on factor analysis only 6 of these items were retained in the relationship quality scale. Motivations for coitus factored into three scales; emotional motivations, sexual desire, and coitus for thrills. A factor was identified that contained 6 items describing partner-specific sexual self-efficacy. Factor analysis of the annual questionnaire confirmed the scales intended to measure religiosity and sexual conservatism.

Scale scores designed to measure pertinent constructs were created by summation of the item scores for the items included in the scales. For example, responses to the 3 items related sexual desire as a motivation for coitus were summed to create a scale of desire motivation. For those scales consisting of more than three items, imputation for missing items was performed using the mean of the participant's responses to other items in the scale. The variables comprising each of the scales are shown in Appendix B (Supplementary Data, Table S1).

The questionnaire consisted of 52 items, 17 of which had up to 8 sub-items. Constructs from the questionnaire that were used for this analysis included religiosity and sexual conservatism. These were both 3-point scales with "not important", "important", and "very important" response choices. Sexual conservatism (item 34, Appendix C, p. 198) consisted of 4 items (Cronbach's α .72). The religiosity scale (item 37,

Appendix C, p. 200) also consisted of 4 items (Cronbach's α .77). Although these two constructs were only measured annually, it was considered unlikely that they would change substantially during the follow-up period and their influence was anticipated to be distal to the actual decision-making event. Therefore, I decided to include them in the analyses.

The participant interview collected information about many of the same constructs and also captured information about partner-specific behaviors and attitudes. The instrument initially consisted of 92 items and collected information regarding up to 7 friends and 5 relationship partners. Fifty-six items were partner-specific providing differential measures of attitudes and behaviors for each partner identified by the participant. The interview allowed more in-depth probing for specific details regarding these behaviors and attitudes than was possible in the annual questionnaire.

The relationship quality scale (Cronbach's α .91) was created from the 6 partner-specific items on p. 217 (Appendix D). The partner-specific sexual self-efficacy scale (Cronbach's α .82) was created from the first 6 items on p. 225. The items in both of these scales used a 4-point response of "strongly disagree", "disagree", "agree", and "strongly agree". The three scales describing motivations for coitus as emotional, sexual desire or thrill seeking consist of 7, 3 and 3 items, respectively on p. 226. All of these items were based on 3-point scales consisting of "not important", "a little important", and "very important". The Cronbach's α for these three

scales were .85, .70, and .59, respectively. The sexual relationship satisfaction scale (p. 224) consisted of 5 items using a 7-point response with 1 being very negative and 7 being very positive.

Design of the Study

The study was a longitudinal assessment of sexual behaviors, and the context in which they occur, in 386 young women and the behavioral and contextual changes during a critical developmental phase of human sexuality: mid-adolescence. Data were collected regarding relationships with parents, peers and young men. Additional factors that may influence sexual behaviors were also measured. These included substance use, sexual self-efficacy, attitudes toward sex and religiosity variables. The study was descriptive and involved no experimental manipulations.

Participants were enrolled during a clinic visit and provided with a full sexual/reproductive health clinical evaluation during which samples were collected to test for biomarkers of sexual activity (i.e. sexually transmitted infections). Prior to the clinical evaluation, participants were given a questionnaire to complete regarding information about a variety of behaviors, attitudes, perceptions and relationships. Following the physical examination the participants were interviewed by trained study personnel using the structured interview instrument. The interview was an alternate means of verifying and clarifying some of the data collected in the questionnaire.

Participants attended the clinic every three months over the next 27-69 months. Telephone reminders were placed to each participant the week prior to her scheduled visit. Clinical exams were performed in the same manner as during the enrollment visit.

Data Collection Procedures

All interview data were collected from the participants at each quarterly visit. During the examination, the nurse collected samples for biomarker evaluation. The samples included vaginal samples for STI diagnostics. STI were used as a biomarker of sexual activity and condom use.

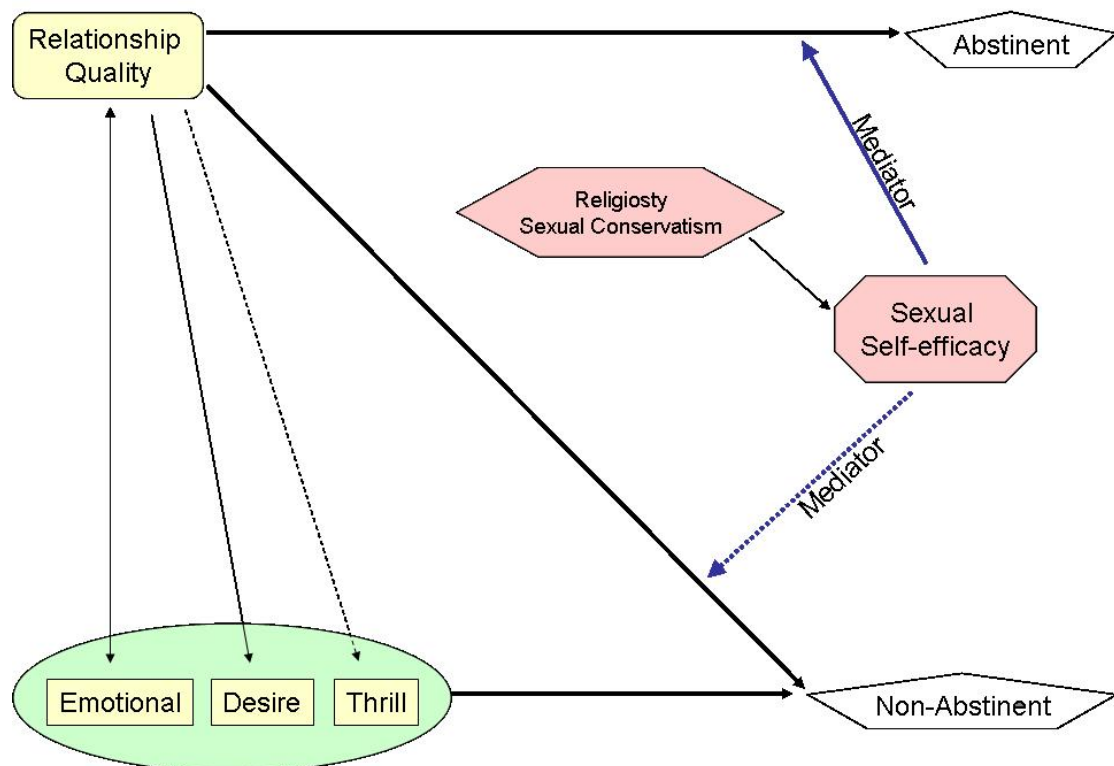
Following the physical examination, interviews were conducted by trained study personnel. In an effort to reduce potential hesitancy to discuss intimate information, all interviewers were women, as was the study nurse. Interviews were conducted in a private room to ensure confidentiality. The interview process took approximately 45 minutes.

All forms were sent to the data management group for scanning and all diagnostic data were entered into the administrative database. Data were reviewed weekly for completeness of forms and validation checks. At weekly meetings any data discrepancies were reported and issues were resolved based on the recollections of the interviewers or group consensus of interpretation of conflicting data.

Conceptual Framework

This research was conducted using the feminist perspective that includes aspects of Social Constructionism and Sexual Script Theories. The socially constructed nature of sexuality is exemplified by the sexual scripts that young women use regarding sexual situations. The motivations for coitus are expected to reflect young women's use of sexual scripts or independence from socially determined scripts in the expression of sexual desire. The *a priori* model for understanding the influences on state of abstinence at enrollment is shown in Figure 1. This model is also influenced by the cognitive-affective personality systems research that postulates the interaction between stable personality characteristics and specific situations is useful for predicting human behaviors. Relationship

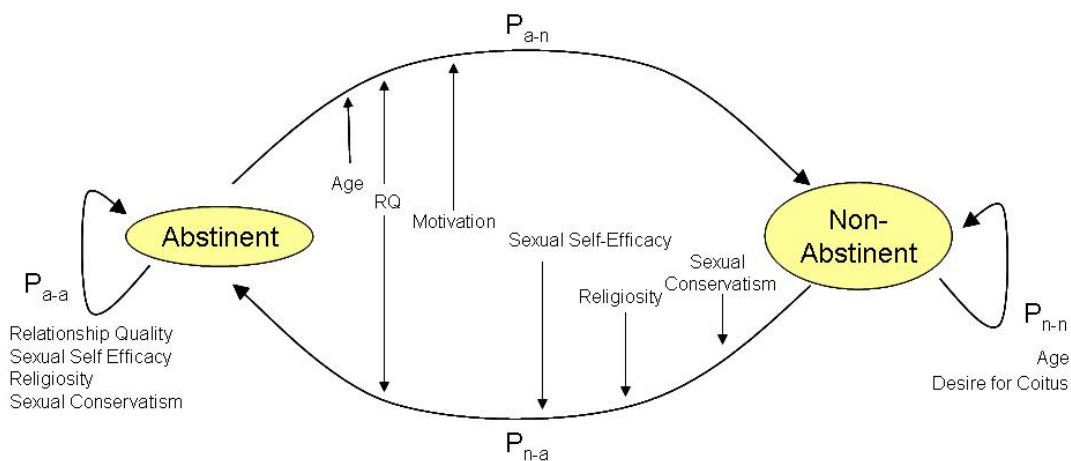
Figure 1. Model of Influences on Abstinence State



quality, sexual motivations, and sexual self-efficacy are the situational features in this model while sexual conservatism and religiosity constitute the stable person characteristics. Women's desire for coitus is included in the model in order to measure the effect of those desires in partner-specific settings. The model will be referred to as a "static" model since it is based on cross-sectional data that does not assess state change.

In the baseline analysis, which is a cross-sectional view of a single abstinence state, it is reasonable to expect that the desires for coitus may be the overwhelming influence in the model in terms of predicting a sexually active state. The univariate results and inter-item correlations obtained from analysis of the baseline data will provide evidence of the predictive validity of the scales that will subsequently be used in the model of abstinence state change.

Figure 2. Abstinence State Change: Markov Model



Abstinence state changes will be modeled using the same conceptual framework with the additional assumption that the state change process is a Markov process (Figure 2). A Markov process describes a system that evolves over time in a manner that can be described by probabilities (a stochastic system). A critical feature of a Markov process is that the probability of being in a future state (in this study abstinent or sexually active states) is independent of past behavior. In other words, the current state, and not the factors that may have lead to the current state, is the only information necessary to predict future states. This model assumes that the relevant predictors of state change between two time points is conditional only on the state at the first time point and is affected by underlying influences in the time between time 0 (T_0) and time 1 (T_1). A first-order Markov model assumes that, in addition to independence from factors resulting in the state at T_0 , the abstinence states at time points prior to T_0 do not influence the probability of transition during the period between T_0 and T_1 . In the model, I have predicted that the probability of changes in abstinence state will be influenced by age, relationship quality (RQ), motivations for coitus, sexual self-efficacy, religiosity and sexual conservatism. Observations will fall into one of two categories: women in an abstinent state at T_0 , and women in a non-abstinent state at T_0 . The transition probabilities for any given period are calculated using a probability matrix consisting of the number of observations in each state by time point. In this study, the probability of changing from abstinence to

non-abstinence (P_{a-n}) is conditional on being in an abstinent state at Time₀ and is equal to $1-P_{a-a}$, the probability of remaining abstinent. Similarly, the probability of changing from a non-abstinent state to one of abstinence is P_{n-a} which is equal to $1-P_{n-n}$. These transition probabilities are shown in the model as curved lines. The predicted influences are shown using straight lines with the arrows indicating the direction of the influence. For example, I have predicted that religiosity, sexual conservatism and sexual self-efficacy will be positively associated with increases in P_{n-a} while relationship quality, motivations for coitus and age will be positively associated with P_{a-n} .

Treatment of Data

This study was an analysis of a larger dataset. Therefore, only variables representing constructs of interest were included in the analyses. Three hundred eighty-six young women were asked to name up to 5 partners. There was no requirement that named partners be restricted to sexual partners. This was designed to allow measurement of change in relationships overtime in those cases where non-sexual partners transitioned into sexual partners, or the reverse cases where sexual partners transitioned into non-sexual partners. For data analysis, partner-specific abstinence states were attributed to each participant for the previous 3-month period. The measures for sexual intercourse included “My partner put his penis in my vagina”, “How many people have you had sexual

intercourse with in the past three months”, and “In the past 3 months, how many times did you have sex with (x)?” . The first two measures were not partner specific, but were used as validation for the partner specific-sexual behavior self-reports. For example, if a woman reported having coitus with 1 or more partners in the last three months, a partner specific report of sexual activity was expected. The last item was used to determine the partner specific state of abstinence. Using this method, a young woman who reported multiple partners could be in multiple abstinence states (e.g. abstinent with 3 and non-abstinent with 1). The unit of observation for the analyses was the three month periods bounded on the left and right by the same partner.

The constructs of dating relationship quality, sexual motivations, religiosity, sexual conservatism, sexual self-efficacy, and sexual relationship satisfaction were evaluated by creating summary scale scores of the items and sub-items that measured the variables as described above. Summary scores for scales measuring the constructs of interest to these analyses were used to determine their ability to predict abstinence state at a single time point and their impact on the probability of abstinence state change using Markov modeling.

The outcome measure of interest for this study was partner-specific state change; abstinent to sexually active or sexually active to abstinent with a specific partner. Markov modeling assumes that the probability of state change is dependent only on the state at the previous time point.

Therefore, only those quarterly segments that were bounded by naming of the same partner(s) were included in the analyses. However, each young woman could contribute multiple quarterly segments if she repeatedly named multiple partners. The main study hypothesis was that young women with higher dating relationship quality measures were less likely to change their partner-specific state of abstinence. Women involved in high quality relationships who were not engaging in sexual activity would be likely to remain abstinent while those who were engaging in sexual activity with a specific partner would be likely to continue to do so (Figure 2). Additionally, young women's motivation for coitus would affect the association between relationship quality and abstinence state change probability by increasing the probability of abstinence to non-abstinence. By including these measures, the young woman's desire for coitus was taken into account rather than making assumptions about this factor. Statistical hypotheses included the following:

H1: Relationship quality is not associated with abstinence.

Univariate analysis using logistic regression was performed with abstinence state at enrollment as the outcome measure. Relationship quality and other factors suggested by the static theoretical model (see Figure 1) were included as independent variables. Variables were included in the multivariable modeling process based on the theoretical model and a best-fit statistical model was determined.

H2: Relationship quality is not associated with motivations for coitus. ANOVA and multivariable regression was performed using data from enrollment visits to determine the association between relationship quality and the three measures of motivation for coitus: emotional motivation, desire motivation, and coitus for thrills. The results of this analysis were used in the statistical model building process.

H3: Religiosity does not change over time. Repeated measures analysis was performed to test the assumption of the theoretical model that this construct was stable over time within subjects.

H4: Sexual conservatism does not change over time. Repeated measures analysis was performed to test the assumption of the theoretical model that this construct was stable over time within subjects.

H5: Relationship quality is not associated with transitions from sexually active to abstinent. This hypothesis was tested using Markov modeling and logistic regression. The state transition probabilities were measured by observing the abstinence state within partnerships over 3-month intervals for all participants. The transition probabilities were conditional on the abstinence state at T_0 , in this case sexually active at T_0 . Univariate analysis was performed to identify those constructs which, in addition to relationship quality, were associated with this state transition. Multivariable modeling was performed to test the theoretical model (see Figure2).

H6: Relationship quality is not associated with transitions from abstinent to sexually active. This hypothesis was tested using Markov modeling and logistic regression. The state transition probabilities were measured by observing the abstinence state within partnerships over 3-month intervals for all participants. The transition probabilities were conditional on the abstinence state at T_0 , in this case abstinent at T_0 . Univariate analysis was performed to identify those constructs which, in addition to relationship quality, were associated with this state transition. Multivariable modeling was performed to test the theoretical model (see Figure2).

H7: Sexual relationship satisfaction does not influence the association between relationship quality and abstinence state change. This measure has only been available for participants interviewed since 2004. Therefore, inclusion of this construct into the full statistical model would have significantly reduced the sample size. Therefore, once final statistical models were determined for hypotheses H5 & H6, this construct was then included with the more limited sample to determine its effect on the models' predictions.

Estimation of transition probabilities was based on empirical evidence using quarterly reports of sexual activity over the previous three months. The transition probability matrix was $\begin{array}{c|c} P_{aa} & P_{an} \\ \hline P_{na} & P_{nn} \end{array}$ structured as shown in the box with subscripts $_{aa}$, $_{an}$, $_{na}$, and $_{nn}$ denoting abstinent at T_0 and T_1 , abstinent to non-abstinent transitions, non-abstinent

to abstinent transitions and non-abstinent at both time points, respectively. Women may have been in both abstinence states simultaneously since abstinence was measured on a partner-specific level. Therefore, women may have been abstinent with one named partner and non-abstinent with another partner and may have undergone transition with one only one partner or with both.

Since the transition probabilities were conditioned on the state at T_0 , separate analyses were performed for observations in an abstinent state at T_0 and those in a sexually active state at T_0 . This allowed classification of each observation as being a transition or steady state and comparison of observations in which transitions occurred and those in which the abstinence state did not change. Using this dichotomous classification process, logistic regression could be used to determine the stable person attributes and situational characteristics that influence the probability of transition.

The unit of analysis in all of the state change analyses was the partner-specific observations over a 3 month period. As mentioned above, this resulted in multiple observations contributed by each participant. In order to control for the intra-subject correlation that one should expect as a result of this repeated measure, the subject was treated as a random effect in the modeling process. SAS 9.1 (Raleigh, NC) using PROC NLMIXED.

Relationship quality and motivations for sexual activity constituted the context in which sexual decision-making occurs and were measured for each named partner. The sexual motivations for individual partners were

analyzed to determine their interaction with relationship quality. Religiosity and sexual conservatism are stable person characteristics that were extracted from the most recent annual interview data. Analysis to determine the variability of these measures over time was used to determine the utility of including these variables as potential mediators of transition probabilities. For statistical model fitting of the baseline data, the best fit was determined using the difference in the -2Log Likelihood score associated with each model. The differences were treated as χ^2 statistics with the degrees of freedom equal to the difference in the number of variables in the models being compared. For analyses using mixed models to control for multiple contributions per subject, the Akaike Information Criterion (AIC) was used with the lowest AIC score indicating the best fit model. Alpha level of .05 was used for all analyses.

Chapter 4

FINDINGS

Statement of the Problem

The focus of the study was on the individual and contextual factors that influence the probability of a within partnership change in abstinence states of young women. Specifically, the study was an attempt to answer the following research questions:

1. Is relationship quality associated with abstinence and is this association, if any, influenced by other contextual factors?
2. What is the relationship between motivations for coitus and relationship quality?
3. Is relationship quality associated with abstinence state change, either from abstinence to sexual activity or the reverse?
4. Is the association between relationship quality and abstinence state change, if any, affected by contextual or personal characteristics?

Construct Measures

The scales used to measure constructs were generated by summation of the responses to the items in each scale (Table S1, Appendix B). The range, mean and standard error (s.e.), median, and Cronbach's α

for the data obtained from each scale are shown in Table 1. All scales had at least moderate reliability according to Cronbach's α with the lowest score (.59) from the coitus for thrills scale which is composed of only 3 items. The scales for relationship quality, religiosity, sexual self-efficacy and sexual relationship satisfaction appear to be skewed toward the upper end of the range which may result in a ceiling effect for these measures.

Table 1. Scales Measuring Factors in Analyses of Abstinence States

Scale	n	Range	Mean \pm s.e.	Median	Cronbach's α
Relationship Quality (6 items, 4-point scale)	269	6-24	19.3 \pm 0.23	19	.91
Sexual Conservatism (4 items, 3-point scale)	364	4-12	8.1 \pm 0.12	8	.72
Religiosity (4 items, 3-point scale)	365	4-12	9.9 \pm 0.09	10	.77
Sexual Self-Efficacy (6 items, 4-point scale)	269	0-24	20.7 \pm 0.19	21	.82
Emotional Motivation for Coitus (7 items, 3-point scale)	267	0-21	11.2 \pm 0.21	11	.85
Desire for Coitus (3 items, 3-point scale)	267	0-9	5.3 \pm 0.10	5	.70
Coitus for Thrill (3 items, 3-point scale)	267	0-9	4.2 \pm 0.08	4	.59
Sexual Relationship Satisfaction (5 items, 7-point scale)	77	7-35	29.9 \pm 0.62	32	.93

Each scale was assessed for missing data which could have significantly affected the scales since they were summations rather than

means. Imputed values were assigned when appropriate. Imputation was performed by replacing the missing item with the mean of those items for which responses were provided. For the religiosity scale, only one participant had missing data and this was only 1 item on the 4-item scale. For the sexual conservatism scale, 5 participants were missing 1 item each. All other scales had either complete responses from all participants or too few items (3 or fewer) to allow imputation.

Study Population Characteristics

Three hundred eighty-six young women were enrolled into the project. The study population was predominately Black, urban young women (Table 2). The majority (74.1%) had had engaged in coitus at some point prior to enrollment.

The planned analysis required that observation units consist of two time points (T_0 and T_1) 3 months apart. Women were classified as being in an abstinent state within a partnership when there was no reported coitus during the period from T_0 and T_1 . Therefore, women who had no subsequent visits after enrollment were not included in this analysis. Retention in the study cohort was high with 365/386 (94.6%) participants contributing at least one follow-up visit. Those who dropped out the study were more likely to have been sexually active at some point prior to enrollment ($p=0.02$), but there were no differences by age or race (Table 2).

Table 2. Comparison of Enrollment Demographics by Lost to Follow-Up Status

Characteristic	Total (n=386)	No follow-up visits (n=21)	At least 1 follow-up visit (n=365)	p-value
Age (mean \pm s.e.)	15.3 \pm .05	15.6 \pm 0.13	15.3 \pm 0.06	.09
African American (Percent [95% CI])	89.9% [86.9, 92.9]	76.2% [56.3, 96.1]	90.7% [87.7, 93.7]	.15
Hispanic	1.3% [0.2, 2.4]	0	1.3% [0.2, 2.6]	.59
Hawaiian/ Pacific Islander	.3% [0, 0.1]	0	2.7% [0, 0.1]	.81
White	10.6% [7.5, 13.7]	23.8% [3.9, 43.7]	9.9% [6.8, 12.9]	.16
Sexually Active (ever, lifetime)	74.1% [69.7, 78.5]	90.5% [76.8, 100]	73.2% [68.6, 77.7]	.02

Relationship Quality and Abstinence at Enrollment

Participants must have named a partner during the interview (although reporting sexual activity with that partner was not a requirement) in order to be included in any partner-specific analyses. Of the 365 participants with at least one follow-up visit, 269 (73.7%) named at least one partner at enrollment. Of the 96 who did not name a partner, 53 (55.2%) reported never having engaged in intercourse and 42 (43.8%) described themselves as not having had intercourse within the 3 months prior to study enrollment. For baseline analyses, the stable personal characteristics (age at enrollment, sexual conservatism and religiosity) were measured at enrollment for all participants who did not drop out of the

study. For those 269 who named partners, the partner-specific measures from the enrollment visit were also evaluated. All analyses were performed using only data from the first-named partner. In the event that a young woman listed multiple partners, it was assumed that the first partner named would likely be the most relevant partner. The majority of young women named only 1 partner (82.9%) while 2, 3, 4 or 5 partners were named by 11.2, 4.1, 1.1 and 0.7% of remaining women, respectively. Limiting the analyses to a single partner per subject eliminated the non-independence that would have been introduced if women contributed multiple responses.

Univariate Analyses

ANOVA These analyses were designed to begin to test hypothesis H1 which stated that relationship quality is not associated with abstinence. The first step toward testing this hypothesis was univariate analysis to determine if an association exists between relationship quality and abstinence when considered in the absence of any other variables. Similar testing of the association of other study constructs was necessary to determine if the theoretical model (Figure 1) is appropriate. The means of the scales measured at baseline for the total study group, with a breakdown by abstinence state, are shown in Table 3. Differences in means were compared by ANOVA with Brown-Forsythe adjustments of degrees of freedom for those measures with unequal variances (based on the Levene

Table 3. ANOVA of Study Constructs based on Abstinence State at Enrollment

	Total (mean [95%CI])	Abstinent (mean [95%CI])	Non-Abstinent (mean [95%CI])	F-statistic (df1, df2)	p- value
Age at Enrollment [†]	15.30 [15.19, 15.41] (n=365)	14.96 [14.83, 15.09] (n=186)	15.65 [15.48, 15.81] (n=179)	41.13[‡] (1, 342.8)	<.001
Relationship Quality	19.28 [18.83, 19.73] (n=269)	18.26 [17.57, 19.94] (n=90)	19.79 [19.22, 20.37] (179)	11.62[‡] (1, 207.1)	<.01
Emotional Motivation for Coitus	11.15 [10.73, 11.58] (n=267)	9.79 [9.17, 10.40] (n=89)	11.84 [11.30, 12.38] (n=178)	24.69[‡] (1, 213.6)	<.001
Desire for Coitus	5.34 [5.14, 5.55] (n=267)	4.71 [4.39, 5.03] (n=89)	5.66 [5.42, 5.91] (n=178)	20.60 (1, 265)	<.001
Coitus for Thrill	4.18 [4.01, 4.34] (n=267)	4.04 [3.76, 4.33] (n=89)	4.24 [4.04, 4.44] (n=178)	1.23 (1, 265)	.27
Religiosity [†]	9.92 [9.74, 10.10] (n=365)	9.95 [9.68, 10.21] (n=186)	9.90 [9.65, 10.15] (n=179)	.065 (1, 363)	.80
Sexual Conservatism [†]	8.12 [7.90, 8.35] (n=364)	8.65 [8.32, 8.98] (n=185)	7.58 [7.28, 7.87] (n=179)	23.10[‡] (1, 357.6)	<.001
Sexual Self-Efficacy	20.69 [20.31, 21.06] (n=269)	20.77 [20.21, 21.32] (90)	20.65 [20.15, 21.14]	.086 (1, 267)	.77
Sexual Relationship Satisfaction [§]	29.88 [28.64, 31.13] (n=77)	27.36 [24.58, 30.15] (n=22)	30.89 [29.59, 32.19] (n=55)	7.04 (1, 75)	.01

[†]These analyses were partner-independent so all participants were included

[‡]The Brown-Forsythe adjustment was used to compensate for unequal variances in these measurements

[§]From the subset of participants from whom these items were available

statistic). Constructs with significant differences between abstinent and sexually active young women are bolded in the table. These include age, relationship quality, emotional motivation for coitus, desire for coitus, sexual conservatism and sexual relationship satisfaction.

Logistic Regression The unadjusted odds ratios, obtained using univariate logistic regression of the baseline data, provided an indication of the magnitude of the differences in the means of study constructs (Table 4). In this analysis, with abstinence as the dependent variable, the p-values for the odds ratios were similar to those obtained using ANOVA with abstinence as the factor of interest (Table 3).

Table 4. Effects on Likelihood of Abstinence: Univariate Logistic Regression using Enrollment Visit Measures

Construct	n	Odds Ratio	95% CI	p-value
Age at enrollment	365	.53	.43-.65	<.001
Relationship Quality	269	.90	.84-.96	<.01
Emotional Motivation for Coitus	267	.83	.76-.90	<.001
Desire for Coitus	267	.69	.58-.82	<.001
Coitus for Thrills	267	.90	.74-1.09	.27
Religiosity	365	1.02	.90-1.14	.80
Sexual Conservatism	364	1.26	1.14-1.39	<.001
Sexual Self-Efficacy	269	.77	.93-1.10	.77
Sexual Relationship Satisfaction	77	.89	.81-.98	.02

Both the significance and the direction of differences between abstinent and non-abstinent women in several construct measures support the inclusion of these factors in the proposed models predicting abstinence state and potentially state change. These constructs were age, relationship quality, emotional motivations for coitus, sexual desire, religiosity and

sexual relationship satisfaction. In addition, the data provides criterion validity for the measures used by correctly predicting abstinence state and discriminating between members of the abstinent and non-abstinent groups in the manner expected by the theoretical framework of this project.

Age at the current visit, the enrollment visit in the static model, was strongly associated with abstinence with an estimated odds ratio of 0.53. This indicates that for each year increase in age, the odds of young women being in an abstinent state were 47% lower. This finding was expected based on previously reported ages of first intercourse. Relationship quality was also strongly associated with abstinence state as predicted by the static model. For each unit increase in the relationship quality scale, young women were 10% less likely to be abstinent (odds ratio 0.90). Therefore, increases in relationship quality are associated with sexual activity in this cross-sectional analysis. It is perhaps inherent by definition that the measures of motivations for coitus would be associated with a lack of abstinence. This was supported by the baseline data with the odds of abstinence decreasing by 17% for each unit increase in the emotional motivations scale and by 31% for the sexual desire scale (odds ratios 0.83 and 0.69, respectively). However, the measure of coitus for thrills was not statistically associated with abstinence or sexual activity ($p=.27$). Finally, sexual relationship satisfaction was strongly associated with lack of abstinence for that subset of the population for whom this measure was available despite the limited sample size. Each unit increase in this scale

was associated with an 11% decrease in the odds of being in an abstinent state.

The only measure that was positively associated with being in an abstinent state was sexual conservatism. For this scale, each unit increase resulted in a 26% increase in the odds of abstinence. This construct is a stable personality characteristic that was predicted by the static model to have a more distal effect (Figure 1). However, the direction of the effect is consistent with the model. This suggests that the proposed model needs to be revised to better reflect this direct association.

The lack of association between abstinence state and the religiosity measure ($p=.80$) is predicted by the static model. This factor was predicted to have only an indirect effect and therefore would not be expected to be directly associated with abstinence state. In the theoretical model, religiosity exerts influence via an effect on sexual self-efficacy which was predicted to have a mediating effect on abstinence state. Therefore, one would expect that religiosity would not be strongly associated with abstinence states and this is supported by the lack of statistical association. The predicted mediating effect of sexual self-efficacy may be consistent with the lack of a direct association ($p=.77$) with abstinence as seen in the univariate analysis and further analysis is warranted. Mediators may have direct effects on the outcome or may only influence the strength or direction of the main effect of other constructs. The role of sexual self-efficacy is unclear based solely on univariate analysis.

The results of the univariate analysis support rejection of hypothesis H1 and suggest that relationship quality is associated with abstinence in a static model. The findings for the other constructs in the theoretical model warrant inclusion in multivariable models to better understand if the association between relationship quality and abstinence is independent of these factors.

Relationship Quality and Motivations for Coitus

Hypothesis H2 stated that relationship quality and motivations for coitus are not associated. It is reasonable to assume that as relationships improve in quality, motivations for coitus within a given partnership might increase. As a couple becomes closer emotionally, the emotional motivations for coitus could be expected to increase as well. However, one could also imagine that in those relationships in which coitus was initially used to strengthen a weak relationship, as that relationship improves, the participants may feel less need to be sexually active within that partnership. Therefore, it was important to analyze the association between these factors before proceeding to building multivariable models.

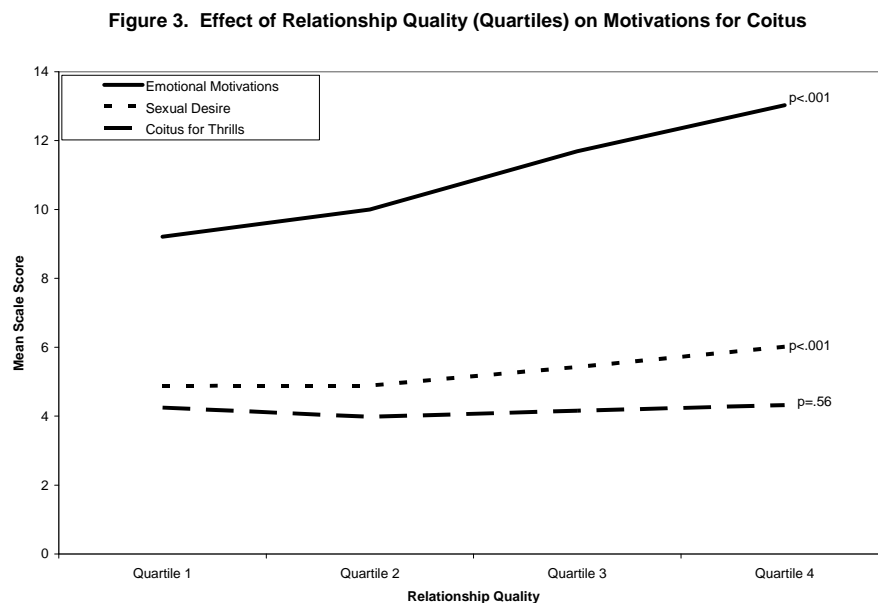
Correlations between the three measures of motivation for coitus, (emotional, sexual desire and thrill-seeking) were measured. Pearson's correlation coefficient and p-values are shown in Table S2, Appendix B. Emotional motivations and sexual desire were both positively associated with relationship quality ($p < .001$ for both correlations). Coitus for thrills

was not significantly correlated with relationship quality ($p=.324$). However, coitus for thrills was positively correlated with emotional motivations and sexual desire with both p -values $<.001$. Therefore, this factor was retained for further analyses.

Using linear regression, emotional motivations and coitus for thrills were both significant predictors of relationship quality ($p<.001$ and $p=.02$, respectively). Emotional motivations were positively associated such that increase in this scale were associated with increases in relationship quality, or the reverse (standardized $\beta = 0.37$). However, the coitus for thrills scale had a negative association with relationship quality indicating that higher endorsement of this motivation was associated with decreases in relationship quality (standardized $\beta = -0.16$). Although desire for coitus was not significant in the model ($p=.21$) it was retained in the model since it resulted in improved model fit. Although these independent variables were all significantly correlated, the collinearity diagnostics did not suggest that this interfered with the model. The model, although significant ($p<.001$ based on $F=16.68$, degrees of freedom=3, 263), explains only 15% of the variance in relationship quality. This suggests that although these factors are highly correlated, they are measuring distinct constructs.

An additional analysis was performed using relationship quality as a factor in ANOVA of each with the motivations for coitus scales as the dependent variable. Relationship quality was dichotomized using the median (19) as the cut-point with scores of 19 or less classified as low

relationship quality and those greater than 19 classified as high relationship quality. In this analysis, unlike the linear regression analysis that included all three motivation measures simultaneously, emotional motivations and sexual desire were significantly different by relationship quality group ($p < .001$ for both scales) while coitus for thrills was not significantly different between groups ($p = .73$). Since the association between relationship quality and motivations for coitus may not be linear for the reasons discussed above, relationship quality was further divided into quartiles in order to plot the effect of incremental increases in relationship quality on the motivation scales. The results of this analysis are shown in Figure 3. In this ANOVA, emotional motivations and sexual desire continued to be highly associated with relationship quality and always in a positive direction (both p -values $< .001$). Coitus for thrills was not



associated with relationship quality ($p=.56$). Based on these analyses, hypothesis H2 can also be rejected. Relationship quality is associated with motivations for coitus in a complex manner.

Rejection of hypotheses H1 and H2 based on univariate analysis of the baseline data warrants use of multivariable analysis to further evaluate the independence of the association between relationship quality and abstinence. The cross-sectional data suggests that sexual conservatism may directly predict abstinence states, contrary to the original model prediction (see Figure 1). Sexual self-esteem does not appear to be directly associated with abstinence state unlike the model prediction. However, findings for all other factors suggest that the model may be correct for those constructs. Therefore, all variables were included in multivariable modeling.

Relationship Quality is Independently Associated with Abstinence

Multivariable modeling using the enrollment data was performed to further test hypothesis H1. Since the hypothesis is that relationship quality does not affect the probability of being in a given state of abstinence, this construct was included in all statistical models in order to test the hypothesis. Age was also included in all statistical models since this factor is known to influence abstinence likelihood, although this data has been predominately derived from studies of abstinence with all partners rather than the partner-specific measure used in this study. Many of the other study constructs are inter-related and therefore it was anticipated that there

would be significant correlation among the measures (Table S2, Appendix B) which might lead to collinearity and obscure significant findings. Therefore, each construct was considered separately before analyzing a full statistical model consisting of all variables. A full statistical model including all constructs was then compared to reduced models designed to minimize collinearity by removing highly correlated items. Model results are shown in Table 5.

Initial statistical models evaluated the addition of a single construct and allowed for evaluation of interaction effects with relationship quality. For those models with poor goodness-of-fit (Hosmer & Lemeshow p-values $<.05$) no data are shown for the adjusted odds ratio, 95% confidence intervals or p-values as these have no meaning in such poor models. The only two models this applied to were the simplest model (including only age and relationship quality) and the model that added religiosity. No models that included interactions are shown since the p-values for all variables in any interaction model (except age) were $>.05$ and the model fit was not improved compared to the simpler models. These findings suggest that inclusion of interaction terms was not helpful in fitting a model to the data.

Although relationship quality was not a significant factor in every statistical model, the estimated adjusted odds ratios from the full data set were highly robust ranging from 0.88-0.96 with the lowest end of a confidence interval at 0.82 and the highest upper limit at 1.03. These

Table 5. Multivariable Models Using Baseline Responses and Abstinence State

Model Constructs	-2 Log likelihood	Adjusted Odds Ratio	95% CI	p-value
Model 1 Age Relationship quality n=269	317.9	not calculated [†]	not calculated [†]	not calculated [†]
Model 2 Age Relationship quality Emotional motivations n=267	302.1	0.61 0.96 0.85	0.47-0.80 0.89-1.03 0.77-0.93	<.001 .26 .001
Model 3 Age Relationship quality Sexual Desire n=267	303.3	0.64 0.93 0.73	0.49-0.83 0.87-1.01 0.61-0.88	.001 .07 .001
Model 4 Age Relationship quality Coitus for Thrills n=267	314.7	0.61 0.91 0.91	0.47-0.79 0.83-0.98 0.74-1.11	<.001 <.01 .36
Model 5 Age Relationship quality Sexual self-efficacy n=269	315.1	0.61 0.88 1.08	0.47-0.79 0.82-0.96 0.98-1.20	<.001 <.01 .112
Model 6 Age Relationship quality Sexual conservatism n=269	305.7	0.59 0.89 1.27	0.45-0.76 0.83-0.96 1.11-1.45	<.001 <.01 .001
Model 7 Age Relationship quality Religiosity n=269	316.2	not calculated [†]	not calculated [†]	not calculated [†]

Model 8	287.0			
Age		0.60	0.45-0.79	<.001
Relationship quality		0.95	0.88-1.03	.22
Emotional motivations		1.25	1.09-1.44	<.01
Sexual desire		0.87	0.78-0.98	.02
Coitus for thrills		0.81	0.63-1.04	.09
Sexual conservatism		1.22	0.94-1.58	.14
n=267				
Model 9	67.0			
Age		0.56	0.32-0.97	.04
Relationship quality		0.83	0.69-1.00	.05
Sexual conservatism		1.57	1.16-2.14	<.01
Sexual relationship satisfaction		0.92	0.82-1.04	.18
n=77				

†Odds ratio and 95% CI not calculated due to poor model fit (goodness-of-fit $p < .05$)

models suggest that as relationship quality increases, there is a decrease in the odds that women will be in an abstinent state with a 4-12% decrease per unit of increase in relationship quality, depending on the statistical model.

Age also provided a consistent estimate across all models developed with the full data set and was significant in each of these models with adjusted odds ratio estimates ranging from 0.59-0.64. In other words, for each additional year of age, the odds of being in an abstinent state decreased by 36-41%. The stability of these estimates, for both age and relationship quality, in the presence or absence of the other constructs suggests that these factors are distinct from the other constructs and important to understanding prediction of abstinence state.

The initial model that included only age and relationship quality was poor (goodness-of-fit $p = 0.048$) and estimates from this model were not

used as mentioned above. The models consisting of one factor in addition to age and relationship quality (statistical models 2-7) were acceptable in terms of goodness-of-fit with the exception of the model (7) containing the religiosity measure. Emotional motivations and sexual desire were both negatively associated with being in an abstinent state which provides evidence of the validity of the scales used to measure these constructs.

Model 8 was the reduced model derived from the complete data set using all 8 construct measures and backward selection with age and relationship quality forced to be retained in the model. The model raises questions because of the reversed direction of the effect of the emotional motivations for coitus scale ($p < .01$). This is a counterintuitive finding (not seen in any other model) because it is difficult to reconcile high motivations for coitus with increased probability of being abstinent. Because of this anomaly and the known correlation between the motivations for coitus and relationship quality, a second model was derived using all measures except the motivations for coitus scales to avoid the problem of multicollinearity. This reduced to model 6 as the best fit for the data. Age, relationship quality and sexual conservatism were the constructs included and all were significantly associated with abstinence state in this cross-sectional analysis. To test hypothesis H7, that sexual relationship satisfaction did not affect the association between relationship quality and abstinence, this construct was added to the final model (see model 9). Despite the limited sample size that resulted from inclusion of the measure,

the model demonstrates the robust nature of the association between relationship quality and abstinence state. The additional construct was not significant ($p=.18$) although the effect was in the expected direction. Therefore hypothesis H7 cannot be rejected, but this may be a reflection of sample size.

The results of the multivariable modeling confirmed the univariate findings that hypotheses H1 and H2 (relationship quality is not associated with abstinence or motivations for coitus, respectively) should be rejected. The data support the static theoretical model of the constructs as shown in Figure 1 with some revisions to account for the observed lack of effect of sexual self-efficacy and religiosity. Based on these results, testing of the hypotheses regarding relationship quality and abstinent state changes within partnerships is warranted.

Changes in Religiosity and Sexual Conservatism over Time

The religiosity and sexual conservatism scales were derived from the annual questionnaire and thus not measured for each specific interval that comprised a unit of observation for the analysis of state change. The statistical modeling assumed that while these measures may change over time, such changes would be gradual and use of the measure collected prior to the period of observation would be a conservative approach. These assumptions are hypotheses H3 and H4: there is no change over time for religiosity and sexual conservatism, respectively. Using the responses

measured at the annual visit prior to the observation period was considered conservative because younger participants were predicted to more strongly endorse items indicating higher levels of religiosity and sexual conservatism. This would suggest that if the period of observation was in the 3rd quarter following the annual questionnaire, the sexual conservatism and religiosity scores would be lower than those used in these analyses which were measured at the previous annual visit.

In order to test the hypotheses that these characteristics are relatively stable over time, a repeated measures analysis was performed using all available participant responses to these items over the entire course of the study. Observations were independent of partnerships since these constructs are considered to be specific to the individual, not the relationship (stable personal characteristics). Mixed modeling to control for subject effects were used to evaluate changes over time in these repeated measures. For religiosity, there was the expected decrease in these scores over time ($p < .01$) from the enrollment visit to year 6. However, the only single year period for which there was a significant change in this measure was from enrollment to the first follow-up visit ($p < .01$). For all other yearly increments, the p -values were $> .05$. The findings for sexual conservatism were similar with a significant overall difference ($p < .001$), a difference from enrollment to the first follow-up visit ($p < .001$), and no other incremental differences (all p -values $> .05$). Thus hypotheses H3 and H4 which stated that there was no difference in

religiosity or sexual conservatism over time can both be rejected. However, the bias that might result from using the previous annual measure rather than the nearest annual measure would be introduced only for those observations which occurred during the first year of follow up. After this point, these characteristics become more stable over time.

Longitudinal Sample Description

For the analyses involving abstinence state change, a young woman had to have remained in a partnership from the beginning (T_0) to the end (T_1) of a three-month observation period. Each three-month period of observation was the unit of analysis for all modeling described below. For example, women who had been enrolled only long enough to be seen at the 1st annual visit (year 2) could have contributed data from up to 4 periods: enrollment to 1st quarterly, 1st to 2nd quarterly, 2nd to 3rd quarterly and 3rd quarterly to 1st annual visits. Women who had completed all 5 years of study follow-up (enrollment through year 6 annual visit) could have contributed up to 20 periods. Additionally, each woman could have named up to 5 partners, thus increasing her contribution to the data accordingly. A total of 311 women were in partnerships that met these criteria and contributed 1,777 observations. Fifteen hundred eighty-eight (89.4%) observations were from 292 women in a sexually active state within specific partnerships at T_0 while the remainder of observations (10.6%) were periods from 112 women that began in a state of abstinence. A single

participant could contribute data to both categories during the same time period if she named more than one partner and was abstinent with only a subset of those partners. For example, if a participant reported having both partner 1 and partner 2 at both T_0 and T_1 , and if at T_0 she was sexually active with partner 1 and abstinent with partner 2, she contributed to both the 1,588 observations of sexually active periods and the 189 observations of abstinent state. The non-independence resulting from multiple contributions per participant, whether during that same observation period or merely over time, was controlled for statistically using a random subject effect in the model.

Relationship Quality and Abstinence State Change

Transition Probabilities

Periods that began with reported sexual activity at T_0 remained in a non-abstinent state in 1508/1588 (95.0%) of observations while a transition to abstinence within the partnership had occurred by T_1 in 80 (5%) (Table 6). While only a small percentage of partnerships transitioned from sexually active to abstinent, the overall sample size was sufficient for testing the study hypotheses. One hundred eighty-nine observation periods began in a state of partner-specific abstinence. Of these, 103 (54.5%) partnerships transitioned to sexual activity during the 3-month period of observation.

Table 6. Transition Probabilities for Partner-Specific Abstinence State Change

	T ₁ Abstinent	T ₁ Sexually Active	n [†]	Transition probability
T ₀ Abstinent	86	103	189	54.5% (Abstinent → Sexually Active)
T ₀ Sexually Active	80	1508	1588	5.0% (Sexually Active → Abstinent)
[†] Sample size is based on the number of 3-month observation periods				

Relationship Quality and Transitions to Abstinence

Univariate analysis The major hypotheses of this study are related to the effect of relationship quality on transition, or state change, over time (H5 and 6). The analyses described here are conditioned on the state observed at T₀. Therefore, all statistical analyses to evaluate the two types of transition (sexually active to abstinent or the reverse) were performed separately for those partnerships in a sexually active state at T₀ to test hypothesis H5, and those that began in an abstinent state to test hypothesis H6.

Logistic regression controlling for multiple contributions per individual was performed to assess the association between the study constructs and the outcome of interest (state change). The first analysis compared the 80 observations of state change, from sexually active to abstinent, to the 1,508 observations which remained in sexually active partnerships without transition (Table 7).

Similar to the results from the cross-sectional analysis of the static model, age at the observation visit (T₁) is strongly associated with decreased odds of transitioning to abstinence ($p < .001$). For each additional

year of age, women were 22% less likely to change from sexually active to abstinent within a partnership. Sexual desire was also negatively associated with transitions to abstinence ($p=.04$). For each unit increase on the sexual desire measure, the likelihood of transitioning to abstinence was reduced by 16%. The other construct that was significantly associated with the probability of transitioning from sexually active to abstinent was sexual conservatism. Sexual conservatism was positively associated with transitioning to abstinence with a 17% increase in the likelihood of transitioning for each unit increase in the sexual conservatism measure.

Relationship quality was not statistically different for those partnerships that transitioned to abstinence compared to those that remained sexually active. However, the p-value ($p=.06$) suggests a trend

Table 7. Differences among Factors between Transitions to Abstinence and non-Transitions

Construct	No State Change [†] Mean (number of observations)	Change from Sexually Active to Abstinent Mean (number of observations)	Odds Ratio	95% CI	p-value
Age at visit	18.0 (1508)	17.3 (80)	0.78	0.67-0.91	<.001
Relationship quality	18.1 (1507)	17.2 (75)	0.94	0.88-1.00	.06
Relationship length (years) ^{††}	0.8 (1508)	0.7 (80)	0.84	0.64-1.10	.20
Emotional motivations	11.9 (1505)	11.1 (75)	0.93	0.85-1.00	.06
Sexual desire	6.1	5.7	0.84	0.71-0.99	.04

	(1505)	(75)			
Coitus for Thrills	4.6 (1505)	4.3 (75)	0.83	0.69-1.01	.07
Religiosity	9.6 (1487)	9.6 (80)	1.00	0.87-1.14	.97
Sexual Conservatism	7.1 (1484)	7.6 (80)	1.17	1.03-1.33	.02
Sexual self-efficacy	16.8 (1506)	16.8 (75)	1.00	0.87-1.15	.96
Sexual satisfaction	29.6 (989)	27.6 (40)	0.96	0.92-1.01	.10

[†]Referent category of univariate analysis

^{††}Relationship length unit is years

with higher relationship quality decreasing the odds of transitioning from sexually active to abstinent. Emotional motivation, coitus for thrills and sexual relationship satisfaction were also marginally associated (negatively) with transitions to abstinence, but none of these measures reached statistical significance in univariate analysis. However, the direction of the trends was appropriate to the predicted theoretical state change model (Figure 2) and the odds ratios were similar to those obtained with the static model.

Relationship length (in years) was added to this analysis as a potential confounding factor that did not apply to the cross-sectional data. Relationship length was not elicited from participants, but was based on the number of consecutive interviews that reported the same partner. Therefore, this measure was not available at the enrollment visit. This

factor was not significantly associated with transition probability ($p=.20$), but was included in the statistical modeling process to verify that it did not have an influence on the odds of transitioning from non-abstinent to abstinent within a partnership. Similarly, the measures of religiosity and sexual self-efficacy were not significantly associated with the probability of transitioning to abstinence (p -values .97 and .96, respectively), but were included in the multivariable modeling in order to determine whether these might be mediating factors in the association between relationship quality and state change.

Multivariable modeling Similar to the modeling of the cross-sectional baseline data, the multivariable modeling for transitions was performed in a series of steps that evaluated a single construct at a time. As before, age at the observation visit and relationship quality were included in all models based on the *a priori* theoretical model developed for this study. Other constructs were evaluated individually and then in full and reduced statistical models. An increased number of the constructs were significantly correlated in the sample set, (Table S3, Appendix B) in part due to multiple contributions per participant. The high degree correlation was controlled for statistically by including random a subject effect in the models.

Akaike Information Criterion (AIC) is a statistic used to rank the performance of statistical models while controlling for the number of

variables included in each model. The model with the lowest AIC value is considered to be the best fit to the data. This measure was used to select the final statistical models in the analyses presented below.

Unlike the statistical model based on the cross-sectional baseline data, the model consisting of only age at visit and relationship quality was a reasonable fit to the transition data with an AIC value similar to the other models in this analysis (Table 8). In this simplest of models, age is significantly associated with a decrease in the likelihood of transitioning from sexually active to abstinent with an estimated 23% reduction in the odds of transition to abstinence per year increase in age. Additionally,

Table 8. Multivariable Models for Transitions to Abstinence within Partnerships

Model Constructs	Adjusted Odds Ratio	95% CI	p-value	AIC [†]
Model 1 (n=1582)				592.4
Age	0.77	0.66-0.90	.001	
Relationship quality	0.94	0.88-1.00	.05	
Model 2 (n=1579)				593.6
Age	0.77	0.66-0.91	<.01	
Relationship quality	0.95	0.88-1.02	.18	
Emotional motivations for coitus	0.97	0.88-1.06	.44	
Model 3 (n=1579)				593.2
Age	0.78	0.67-0.91	<.01	
Relationship quality	0.95	0.89-1.01	.11	
Sexual desire	0.92	0.77-1.10	.32	
Model 4 (n=1579)				592.3
Age	0.78	0.66-0.91	<.01	
Relationship quality	0.94	0.88-1.00	.07	
Coitus for thrills	0.88	0.72-1.07	.19	
Model 5 (n=1580)				594.2
Age	0.77	0.66-0.90	.001	
Relationship quality	0.94	0.88-1.00	.05	

Sexual self-efficacy	1.03	0.89-1.19	.73	
Model 6 (n=1579)				593.7
Age	0.75	0.63-.089	<.01	
Relationship quality	0.94	0.88-1.00	.05	
Relationship length	1.11	0.81-1.50	.52	
Model 7 (n=1558)				586.3
Age	0.77	0.67-0.90	.001	
Relationship quality	0.94	0.88-1.00	.04	
Sexual conservatism	1.17	1.03-1.33	.02	
Model 8 (n=1561)				592.3
Age	0.77	0.66-0.90	.001	
Relationship quality	0.94	0.88-1.00	.05	
Religiosity	0.98	0.86-1.233	.80	
Model 9 (n=1558)				586.6
Age	0.78	0.67-0.91	<.01	
Relationship quality	0.94	0.88-1.00	.04	
Sexual Conservatism	1.21	1.05-1.39	<.01	
Religiosity	0.91	0.78-1.05	.20	

[†]Akaike Information Criterion

relationship quality was marginally significant with a p-value of .05. The estimated adjusted odds ratio for relationship quality in this simple model was 0.94 suggesting a 6% decrease in the odds of transition to abstinence for each unit increase in the relationship quality measure.

The direction and magnitude of the effect of both age and relationship quality were similar to the findings from the static model. Also similar to the static analysis was the finding that the effects of age and relationship quality were highly robust in each of the statistical models evaluated. Addition of other constructs provided little or no improvement in model fit with the exception of the statistical model containing sexual conservatism (7) and the one containing both sexual conservatism and

religiosity (9). Based on the AIC score, the more parsimonious model (7) was considered to be the best fit. In this model increases in age and relationship quality were associated with decreased likelihood of transitioning to abstinence while increases in sexual conservatism were associated with increased transition probability. All variables in the model were statistically significant. These findings support rejection of hypothesis H5, that relationship quality is not associated with transitions to abstinence.

Relationship Quality and Transitions to Sexual Activity

Univariate analysis Relatively few observations in this study began in an abstinent state at T_0 : 189/1777 (10.6%). As described above, the majority (54.5%) of these relationships subsequently transitioned from abstinent to sexually active within the 3-month observation period. In this analysis, a period of abstinence is defined as at least three months per partnership. The influences on transition from abstinent to non-abstinent should be expected to be in the opposite direction from those described for transitions from sexually active to abstinent. The results of univariate logistic regression on this set of observations confirm this expectation (Table 9). The change in direction is appropriate to the transition type.

Age, which was significant in all statistical models to this point, was also a significant predictor of transition to sexual activity. In this analysis, the association was positive with a 69% increase in the likelihood

of transition to sexual activity for each additional year of age. The only other significant factor in univariate analysis was sexual conservatism. Appropriately, the direction of this effect was opposite to that seen with transitions from sexually active to abstinent with an 18% reduction in the likelihood of transition with each unit increase in sexual conservatism. Even though the remainder of the constructs, including relationship quality, were not significantly associated with partnership transitions to abstinence, they were included in multivariable modeling for hypothesis testing.

Table 9. Differences among Factors between Transitions to Sexual Activity and non-Transitions

Construct	No State Change [†] Mean (number of observations)	Change from Abstinent to Sexually Active Mean (number of observations)	Odds Ratio	95% CI	p-value
Age at visit	16.1 (86)	17.2 (103)	1.69	1.25-2.28	<.001
Relationship quality	18.3 (86)	18.3 (103)	1.02	0.90-1.16	.78
Relationship length ^{††}	0.4 (86)	0.6 (103)	1.50	0.93-2.42	.10
Emotional motivations	10.1 (85)	10.5 (103)	1.11	0.95-1.30	.19
Sexual desire	5.2 (85)	5.6 (103)	1.30	0.96-1.74	.09
Coitus for Thrills	4.1 (85)	4.2 (103)	1.08	0.79-1.47	.64
Religiosity	9.5 (85)	9.8 (102)	0.99	0.78-1.27	.96

Sexual Conservatism	9.7 (85)	7.8 (102)	0.82	0.68-0.99	.04
Sexual self- efficacy	16.9 (85)	17.1 (103)	1.04	0.93-1.29	.74
Sexual satisfaction	26.4 (39)	28.0 (59)	1.03	.97-1.08	.36

[†]Referent category of univariate analysis

^{††}Relationship length unit is years

Multivariable modeling As described above, there were many fewer observations that began in an abstinent state. This may have affected the power to detect differences between those that remained abstinent and those partnerships in which a transition occurred. This may be particularly true for those measures with large variance. Unlike the statistical models of transitions to abstinence, for observations that began in the abstinent state, age was the only variable that was consistently associated with state transition (Table 10). Using the AIC score, the model including sexual conservatism (7) was again the best fit to the data. However, unlike the statistical model for transition to abstinence, in this model only age is significantly associated with the odds of transition to sexual activity. The

Table 10. Multivariable Models for Transitions to Sexual Activity within Partnerships

Model Constructs	Adjusted Odds Ratio	95% CI	p-values	AIC [†]
Model 1 (n=189)				243.4
Age	1.69	1.25-2.28	<.001	
Relationship quality	1.00	0.87-1.12	.86	
Model 2 (n=188)				244.5
Age	1.67	1.23-2.27	<.01	
Relationship quality	0.98	0.86-1.12	.76	
Emotional motivations for coitus	1.05	0.89-1.23	.55	
Model 3 (n=188)				243.3
Age	1.67	1.23-2.27	<.01	
Relationship quality	0.99	0.87-1.12	.83	
Sexual desire	1.19	0.90-1.57	.23	
Model 4 (n=188)				244.8
Age	1.68	1.25-2.27	<.001	
Relationship quality	1.00	0.88-1.13	.94	
Coitus for thrills	1.06	0.78-1.44	.72	
Model 5 (n=188)				244.9
Age	1.68	1.25-2.27	<.001	
Relationship quality	0.99	0.87-1.14	.93	
Sexual self-efficacy	0.98	0.78-1.24	.90	
Model 6 (n=189)				244.7
Age	1.83	1.27-2.64	<.01	
Relationship quality	0.99	0.87-1.13	.90	
Relationship length	0.78	0.44-1.39	.40	
Model 7 (n=187)				238.7
Age	1.66	1.26-2.25	<.01	
Relationship quality	1.01	0.89-1.15	.87	
Sexual conservatism	0.85	0.71-1.02	.09	
Model 8 (n=187)				241.3
Age	1.73	1.27-2.36	<.001	
Relationship quality	0.99	0.88-1.13	.93	
Religiosity	1.06	0.85-1.33	.60	

Model 9 (n=187)				239.3
Age	1.65	1.23-2.20	<.001	
Relationship quality	1.01	0.90-1.14	.89	
Sexual Conservatism	0.83	0.70-0.99	.04	
Religiosity	1.15	0.92-1.42	.21	
† Akaike Information Criterion				

adjusted odds ratio is similar (but in the appropriate direction) to that obtained in the cross-sectional analysis with a 66% per year increase in likelihood of transition to sexual activity. Relationship quality was consistently not associated with transitioning in contrast to the results of the cross-sectional data analysis and in contrast to transitions to abstinence

Sexual Relationship Satisfaction and State Transitions

Although the measure of sexual relationship satisfaction was only available for small subset of participants at the enrollment visit (28.6%), a larger proportion of follow-up visits captured this information. The proportion of partner-specific observations for which this measure was available was 68.0% (1209/1777). This construct was not used to develop a multivariable model since approximately 1/3 of cases were missing this measure. Therefore, the variable was added to the model already determined to be the best fit as described above. For transitions both to abstinence and to sexual activity, this construct was added to the final model consisting of age, relationship quality and sexual conservatism (Table 11).

Table 11. Multivariable Models on the Subset for which Sexual Relationship Satisfaction was Measured[†]

Model Constructs	Adjusted Odds Ratio	95% CI	p- value	AIC
Sexually Active to Abstinent Transitions (n=1014)				329.8
Age	.77	0.63-0.94	.01	
Relationship quality	1.13	0.99-1.27	.05	
Sexual conservatism	1.15	0.95-1.38	.14	
Sexual relationship satisfaction	0.93	0.87-0.98	<.01	
Abstinent to Sexually Active Transitions (n=98)				128.8
Age	1.47	1.17-1.83	.001	
Relationship quality	1.01	0.87-1.16	.91	
Sexual conservatism	0.88	0.71-1.09	.25	
Sexual relationship satisfaction	1.03	0.99-1.08	.18	
[†] Multiple contributions per participant were controlled for by using the subject ID as a random effect variable				

Age remained a significant predictor of state change within partnerships for transitions to either abstinence or sexual activity. The direction and the magnitude of the effect remain consistent with previous models. For transitions to sexual activity, relationship quality approached significance ($p=.05$), however, the direction of the effect was not the anticipated reduction in transition likelihood. This may suggest that the high degree of correlation between relationship quality and sexual relationship satisfaction (Table S3, Appendix B) resulted in collinearity problems making interpretation of this model difficult. Sexual conservatism was no longer significant in the model ($p=.14$). Sexual relationship satisfaction was a significant (negative) predictor of transition to abstinence. The direction of the prediction was as expected with an estimated 7% decrease in the likelihood of transition to abstinence for each

unit increase in the sexual relationship satisfaction scale. This is an intuitive finding: sexual satisfaction does not promote transition to abstinence.

The model of transitions from abstinence to sexual activity that included sexual relationship satisfaction indicated no significant predictors of transition other than age. This is a reasonable finding given that those partnerships in an abstinent state that do not transition are not likely to contribute meaningful data to the sexual relationship satisfaction scale since they are not currently (over the preceding 3 months) engaged in sexual activity. Given the lack of clear association from the cross-sectional data, and the unclear meaning (or lack) of an effect of sexual relationship satisfaction in the state change models, hypothesis H7 cannot be rejected. Sexual relationship satisfaction does not appear to influence the association between relationship quality and transition probability. However, given the restricted sample size, further analysis of this construct should be performed when additional data are available.

Evaluation of a Higher Order Markov Model

The state change model shown in Figure 2 is a first order Markov model. This assumes that the state at time T_0 is sufficient for prediction of the state at T_1 , in other words, the process has no “history”. Higher order Markov models assume that knowledge of previous states (prior to T_0) is necessary to prediction of the state at T_1 . In order to evaluate the effect of

using a higher order model, a second order model was evaluated. A second order model depends not only on T_0 , but also on T_{-1} . In order to perform this evaluation, only partnerships that had been reported for 3 consecutive visits could be included in the data set. Transitions continued to be measure from T_0 to T_1 . This limited the number of evaluable observations to 947 for transitions from sexually active to abstinent and 75 for transitions from abstinent to sexually active. In the analysis of transitions from sexually active to abstinent, no effect was observed with addition of T_{-1} state. In contrast, for those partnerships that began in an abstinent state at T_0 , they were less like to transition to sexual activity if they had also been in an abstinent state at T_{-1} within the same partnership ($p < .05$ for all constructs). These findings suggest that for those in an abstinent state, the process does have a “history” component. However, given the limitations of sample size that result from this requirement for partnership length and that a history effect was not seen for partnerships that began (at T_0) in a sexually active state, use of the simpler, first order model is reasonable.

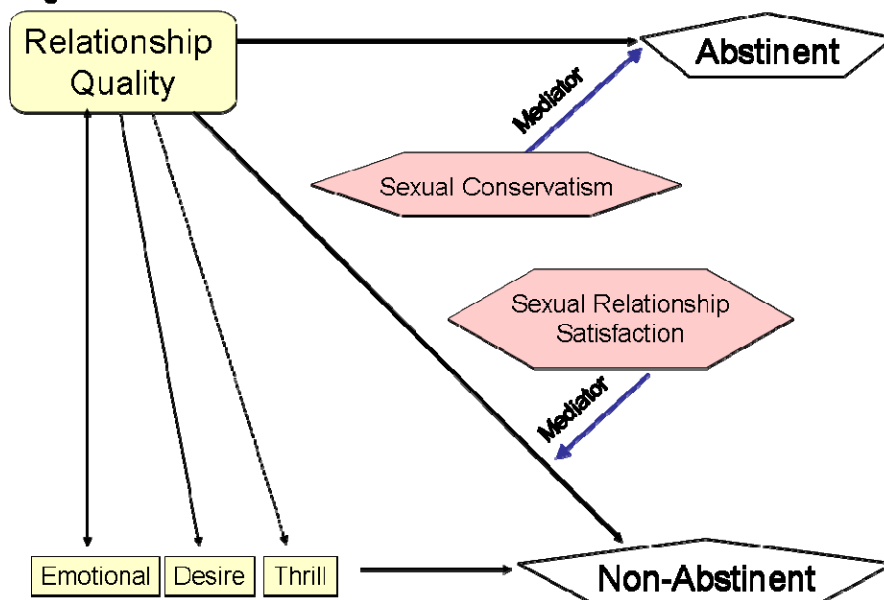
Revised Theoretical Models

Using the best-fit statistical model as the final interpretation of the cross-sectional results, the theoretical static model needs to be adjusted to remove the proposed influences of sexual self-efficacy and religiosity and to make the influence of sexual conservatism direct rather than indirect

(Figure 4). Although motivations for coitus were removed from statistical model 6 (Table 5) in order to make the model more functional, it is clear that these factors interact with relationship quality as proposed in the theoretical model and play a role in the sexual decision-making process. Therefore, these constructs remain in the final static model. Finally, the addition of sexual relationship satisfaction did not affect the estimates of the other three constructs in the model. This factor was not a significant predictor and addition of this variable greatly reduced the sample size. Because of the limited sample, it is unclear whether sexual relationship satisfaction is an important mediator in the static model.

Based on the results of the Markov modeling, the proposed theoretical model for state change within partnerships was revised (Figure 5). In this model, increases in age are associated with non-abstinence,

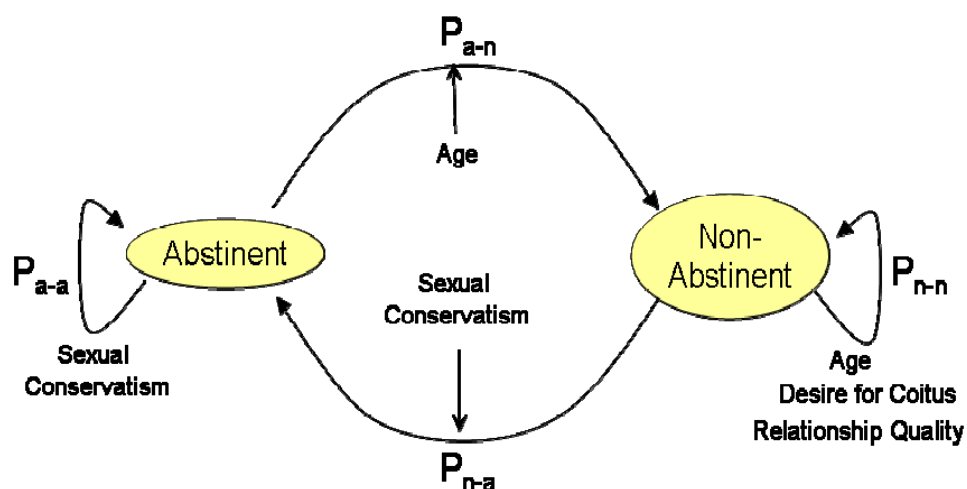
Figure 4. Revised Model of Influences on Abstinence State



regardless of the initial state. Increases in age are associated with transition from abstinent to sexually active and with no transition for partnerships that begin in the sexually active state. Similarly, sexual conservatism is consistently associated with abstinence regardless of the initial state of the partnership. Relationship quality has a significant influence of the probability of remaining in a sexually active state, as does sexual desire, but does not have an effect on the probability of transitioning from abstinence to sexual activity in the revised theoretical model.

From the results of both the static analysis and the state change modeling, relationship quality is independently associated with abstinence and transition to abstinence, but not with transition to sexual activity. These associations are affected by age and the complex relationship between relationship quality and the motivations for coitus and sexual relationship satisfaction. Sexual conservatism is an important construct about which the effects of change over time are unknown. While

Figure 5. Revised Abstinence State Change Markov Model



religiosity also changes over time, neither this factor nor sexual self-efficacy appear to play a measurable role in the decision-making process regarding state change and are not associated with a particular abstinence state.

Chapter 5

CONCLUSIONS

*Conclusions**Validity of Measures*

The measures in the instruments used for this project have been used in previous studies, but this the most comprehensive evaluation of the particular scales used in this project. Factor analysis confirmed that items in the scales used in these analyses did indeed measure the same construct and that the constructs were distinct from one another. The Cronbach's α measure suggested good reliability and the ability of the scales to discriminate among or to predict groups provided confidence in the scales' criterion validity. For example, the correlations among relationship quality, and the emotional and desire motivations for coitus were very strong as would be expected. However the association between relationship quality and coitus for thrills was not significant, again providing evidence that these scales are responding as predicted. Additionally, while the correlations among the three measures of motivations for coitus were significant, they were not entirely overlapping as demonstrated by the differences in their ability to predict, or be predicted by, relationship quality. This suggests that these measures successfully capture different dimensions of a larger construct. Finally, the relatively low proportion of the variance in relationship quality (15%) explained by these measures also suggests that these scales are capturing different,

although related, constructs. However, whether the scales are measuring the construct they are design to measure is not as easily demonstrable by statistical analysis. The face validity of these items is good and was reviewed by a panel of experts prior to study inception. The scales performed as would be expected based on theoretical models of adolescent sexual behavior.

Relationship Quality is Associated with Abstinence States

The major conclusion from the analysis of the cross-sectional data was that relationship quality was significantly and independently associated with abstinence. The negative association, suggesting that as relationship quality increases young women are more likely to be in sexually active relationships, is an important finding since it demonstrates that contextual (situational) factors play a role in behavioral choices regarding sexual activities.

One the strengths of this project is the detailed information collected from each participant regarding attitudes that allowed evaluation of multiple constructs that might also affect abstinence. In the analyses performed here age, motivations for coitus, religiosity, sexual conservatism, sexual self-efficacy and sexual relationship satisfaction were included. It is intuitive that many of these constructs may be interrelated and understanding the complex relationship among them is difficult. However, despite those difficulties, the ability to look at all of the

constructs in one population provided an opportunity to begin to understand the complex factors that affect abstinence.

An interesting result of these analyses was the robustness of the effect estimated for relationship quality. The odds ratios, both unadjusted from univariate analyses and adjusted by multivariable modeling to control for the addition of other constructs, were remarkably consistent. This supports the conclusion that this factor is relevant for understanding abstinence regardless of other variables. In some cases, the addition of other constructs into the multivariable modeling affected the significance of the association between relationship quality and abstinence, but did not have a large effect on the odds ratio, only on the 95% confidence intervals. In fact, those variables that reduced the significance of the relationship quality measure in statistical models were all significantly correlated with the relationship quality scale. The inclusion of both constructs in such a model is likely to result in collinearity which may obscure true relationships. Therefore, the stability of the effect, as measured by the odds ratio, may have more practical relevance than the p-value obtained from modeling.

The same observation applies to age. This measure was the most consistently significant factor in any of the models using the cross-sectional data. The finding that as age increases so does the likelihood of being sexually active confirms previously published observations. Increased age has previously been associated with onset of sexual activity and with

increased duration of partnerships which leads to initiation of sexual activity within those partnerships. The association between age and sexual activity was not only consistently observed, it was also of a consistent magnitude with similar odds ratios in univariate and all multivariable models.

Sexual conservatism was also consistently significant in univariate and multivariable modeling using the cross-sectional data. This effect was in the opposite from that seen for relationship quality and age. Increases in sexual conservatism were associated with increases in the likelihood of being abstinent. The direction of the effect is self-evident from the wording of the items that comprise this scale. These items describe reasons for delaying onset of sexual activity. The relationship between sexual conservatism and abstinence was robust with similar odds ratios for all models that included this construct.

The findings for age and sexual conservatism were important for demonstrating that stable personality characteristics, in addition to contextual factors such as relationship quality, are also important to the sexual decision-making process. These findings were similar to those of Michels and colleagues (Michels, et al., 2005). If only relationship quality had been evaluated in order to understand sexual behaviors, an incomplete picture of the process would have been obtained. As suggested by the work of Mischel and Shoda (Mischel & Shoda, 1998), the findings of this study support the concept that both stable personality and situational

factors interact to provide predictable patterns of behavior within individuals.

Motivations for Coitus are related to Relationship Quality

Motivations for coitus require separate consideration. It is intuitive that these situational measures should be associated with sexual activity as they describe reasons for engaging in coital behaviors. The analyses of the relationship between these constructs and relationship quality revealed an intricate picture. Emotional motivations for coitus were consistently associated with relationship quality: the two constructs were significantly positively correlated; mean emotional motivation scores were higher when relationship quality was higher (ANOVA); and, emotional motivation was a significant statistical predictor of relationship quality (linear regression).

However, understanding the interplay of sexual desire and coitus for thrills with relationship quality was somewhat more difficult. Sexual desire was positively correlated with relationship quality and scores for this measure were higher when relationship quality was higher. In contrast to this finding based on ANOVA with relationship quality as the grouping variable, sexual desire was not a significant predictor of relationship quality in linear regression models. The finding that sexual desire was related to relationship quality and also to likelihood of sexual activity was encouraging. The expression of sexual desire has been an understudied

component of female adolescent sexuality that appears to be an important component of sexual decision-making in this population.

Coitus for thrills was not correlated with relationship quality, but was correlated with the other two measures of motivations for coitus. When relationship quality was the grouping factor in ANOVA, coitus for thrills was not significantly associated with relationship quality while the reverse was true for linear regression. Although collinearity diagnostics suggested that the motivation constructs were not overlapping, they may be too closely related for these analyses to be easily interpreted. As expected, the complex relationship among these factors created difficulty when building multivariable models of cross-sectional data. Since the study questions were primarily concerned with relationship quality, the motivations for coitus were dropped from models to allow evaluation of relationship quality. Therefore, although relationship quality was independently associated with abstinence in multivariable modeling, this conclusion is based on elimination of a group of constructs which were most likely not independent from relationship quality.

Similar to the motivations for coitus, sexual relationship satisfaction is a measure that is intricately related to relationship quality and sexual activity. This construct was associated with abstinence state in univariate analysis. However, this association did not remain when controlling for age, relationship quality and sexual conservatism. This may be due to the overlapping nature of relationship quality and sexual relationship

satisfaction. It may also be a reflection of the loss of power resulting from the reduction in sample size for which this measure was available. Further study into this construct and its interaction with relationship quality is warranted.

Relationship Quality is Associated with Abstinence State Change

In addition to detailed attitude and behavioral measures, the other strengths of this project were the longitudinal follow-up of participants and the ability to place measures in the context of relationships. Few studies have had both of these advantages. The Add Health data is probably the largest analysis of this type (Cleveland, 2003). However, the follow-up period was, on average, 1 year. Understanding changes in abstinence state over time provides information that is distinct from knowing the relevant factors that are associated with being in a particular state at any given time point.

Interestingly, while relationship quality was a significant predictor of remaining in a sexually active state, there was no association in either direction between this construct and the likelihood of transitioning to sexual activity. For partnerships currently in an abstinent state, age was the only significant indicator of state change. Therefore, while both personality (age and sexual conservatism, in opposing directions) and contextual factors (relationship quality) were associated with transitions to abstinence, only personality factors were associated with transitions to

sexual activity and only age remained significant when controlling for other factors. This suggests that attempts to increase endorsement of reasons for delaying intercourse may not be useful in populations of young women who are currently abstinent. However, in sexually active populations, this type of message may prove to be more effective. It is critical to note that these “populations” may not be distinct since women may be engaged in multiple partnerships in different abstinence states.

The lack of influence of religiosity on state changes in either direction was also an interesting factor. As discussed above, this may be related, in part, to differences in the measure of this construct compared to previous studies. However, it may also explain the conflicting data that has been generated by interventions focusing on religious motivations for maintaining abstinence.

The finding that sexual self-efficacy (a partner-specific measure) was not associated with state changes was not expected and the reasons for this are unclear. However, improved self-efficacy is frequently a goal of sexual health promotion exercises. This data suggests that this may not be an effective strategy.

Relationship length (based on number of visits at which the same partnership was reported) was included in the state change analysis. Unlike the results of Michels’ study (Michels, et al., 2005) this was not a significant predictor of state change for transitions in either direction.

While sexual desire was the only motivation for coitus significantly associated with remaining sexually active (and only prior to adjusting for other factors), emotional motivations and coitus for thrills appeared to be nearing statistical significance. As mentioned above, the fact that sexual desire is high in high quality relationships and is associated with coital activity suggests that these young women have a higher level of sexual agency than might be expected based on feminist theory. Many of the measures of emotional motivations for coitus are representative of sexual scripts that might be common rationalizations for engaging in sexual behaviors in order to please male partners. However, the fact that sexual desire played a stronger role in sexual decision-making regarding coitus than emotional motivations suggests that at least some of these young women are not limited by socially constructed sexual scripts. In addition, the relationship quality measures were framed from the perspective of participant contentment not a woman's ability to please her partner. Taken as a whole, these findings are very positive from a feminist perspective as they suggest that in this group of young women, sexual agency may be high and sexual compliance low. These findings are encouraging evidence that in this population of predominately Black young women, oppression of sexual desire and adherence to paternalistically derived sexual scripts may be less common than in the past.

Limitations

Population

This study has several limitations that warrant discussion and should be considered when interpreting the findings of these analyses. Perhaps the most important issue is the population enrolled into this project. As a result of the clinic demographics of the recruitment sites, this population was not representative of the overall population of Marion County, Indiana. The young women were predominately Black (91% of observations were from Black women) and were exclusively from urban neighborhoods. Therefore, due to the increased risk of STI related to disadvantaged socio-economic status, these young women had high rates of STI. Performing studies in populations such as this is appropriate since these young women would likely be the target of intervention and health education programs designed to decrease STI and unwanted pregnancy.

Perhaps more significantly, the participants in this study were highly motivated to provide very sensitive data with high frequency. The retention rate throughout the project was quite high; drop-outs occurred most frequently between enrollment and the first follow-up visit and this happened for only 5% of subjects. This suggests that those young women who remained in the study were comfortable providing information regarding sexual behaviors. This raises the possibility that these women have higher sense of sexual agency than women that didn't consent to participate or that dropped out after the first interview. This may, in part,

explain the observation that these young women were able to express and act upon sexual desire.

Study Design

As a result of the study design, there are some inherent limitations in the meaning that can be attributed to the results presented. First, because interviews were conducted quarterly and measured behaviors and attitudes from the preceding 3 months, this was the period used to define abstinence. This was an arbitrary choice, but it can be justified from the perspective of applying this data to public health practices. Most curable STI have incubation periods less than 3 months. Women who have been abstinent for this period of time are at much less risk for STI or pregnancy. Additionally, for this age group, partner change is estimated to occur every 3-6 months. Therefore, using defining abstinence as a longer period than 3 months might not be reflective of relationship patterns. Further work is underway to better understand rates of partnership change in this study population.

Second, the focus of this analysis is specifically on coital behaviors because these behaviors were measured for each partner. Understanding transitions to non-coital sexual behaviors would be of interest since one could postulate that there may be a trajectory of changes that progresses from kissing and touching to oral sex to intercourse. Unfortunately that could not be analyzed in this population.

Finally, the reasons behind transitions are not included in this analysis. Transitions from abstinent to sexually active may represent initiation of sexual activity for the first time, initiation of sexual activity within a partnership, or resumption of sexual activity within a partnership following a period of abstinence. On the other side of the spectrum, transitions to abstinence may reflect choices within an active partnership, dissolution of a partnership, or unavailability of the partner. It is important to consider these possibilities and the differences in intervention messages that might apply to the various situations. For example, if a young woman is sexually active with a partner who becomes incarcerated and is subsequently released, she would have undergone 2 transitions; 1 to abstinence (based on partner unavailability) and 1 to sexual activity (based on resumption of sexual activity with an existing partner). The counseling message for healthy sexual behaviors for this woman might be considerably different from the message given to a woman who has ended a relationship and begun a new one but is not yet sexually active within the new partnership. Further analysis of the complete records of all of young women who transitioned to abstinence to better understand the meaning of these transitions is a future project with this data.

Measures

Another potential limitation of this study is related to the inherent difficulty with measurement of sexual behaviors, particularly in youth.

There are numerous issues associated with measurement. The first issue was the validity of self-reported sexual behaviors. Social desirability can affect this measure in both directions: sexual activities may be inflated in order to “fit in” with a peer group, or under-reported to avoid stigma. In this study, the interviewers developed a strong rapport with the participants and were well trained in avoiding judgmental attitudes. Additionally, interviews contained multiple items intended to cross-validate one another. The measures for sexual activity, the outcome in these analyses, were highly concordant among the three items that captured this information. This provides confidence that the measures are useful for these analyses.

Some of the measures used for this project were comprised of scales with the 3-point items (religiosity, sexual conservatism, and the three motivations for coitus) based on ratings of “not important”, “(a little) important” or “very important”. While these responses are clearly ordinal, they are not necessarily evenly distributed and their distribution may vary widely among different participants. However, 3 of these 5 measures were significant in at least some of the models developed suggesting that they were useful in discrimination of abstinence states or state change.

Finally, the measurement of religiosity and sexual conservatism are not identical, and therefore not easily compared, to measures used in previous reports of these constructs and their influence on abstinence. In fact, the sexual conservatism scale consists of items that might more commonly be included in measures of religiosity. However, these items

were clearly distinct from the items that comprised the religiosity scale based on both factor analysis and discriminant ability. The finding that sexual conservatism was consistently an important construct while religiosity was consistently not associated with abstinence may suggest that the measures used in previous studies that reported a relationship between religiosity and abstinence should be re-evaluated.

Statistical

One of the statistical limitations of these analyses is related to the repeated measurement of data from a small group of young women. Statistical techniques controlling for the non-independence which results from multiple contributions per participant were used when appropriate. However, there was insufficient data available to specifically analyze differences within an individual, either with different partners in the same observation period or over multiple observation periods; 88.4% of participants contributed more than one observation period. This type of analysis is certainly warranted and will be one of the future projects using this data. Nonetheless, the analyses presented here are appropriate in light of the fact that few participants contributed multiple transitions during the same observation period.

The findings of the state change analysis are dependent on meeting the assumptions of Markov modeling. The first of these is that abstinence state change is a Markov process. The second major assumption is that the

process has no history and transition at T_1 is solely dependent on the state at T_0 . Using a subset of the data with extended observation periods, a second order Markov model would not have improved the ability to predict transitions to abstinence, but may have been appropriate for transitions to sexual activity. This finding suggests that understanding history more than 3 months in the past may be useful for women currently in an abstinent state within a given partnership.

Finally, the difficulties that result from attempting to model highly related constructs were encountered in these analyses. This was anticipated and every attempt was made to deal with overlap in constructs and domains. Interestingly, no significant interactions were observed; however, this is likely a result of parceling the effect observed over numerous closely related features. This in turn resulted in reducing the impact assigned to any one construct in the interaction models and negating the effect of both main and interaction variables. The necessity of removing the motivations for coitus in the analysis of cross-sectional data indicates, as mentioned above, that the effect of relationship quality on abstinence is not independent of these motivations. However, the state change models were not similarly restricted and it is therefore reasonable to conclude that relationship quality is an important factor in sexual decision-making.

Implications and Recommendations

There are two key features of this study that provide unique information to the public health community. The first is that analysis of both static and state change models was performed. This allowed a comparison of the two findings which showed that our understanding of abstinence in young women, which has been based predominately on cross-sectional data, may be incomplete. Second, using frequently collected, partner-specific measures with frequent measures of behaviors provided an unprecedented opportunity to evaluate both personality characteristics and situational factors that may predict states or may influence state change. The data presented here clearly demonstrate that 1) the factors that are important to predicting abstinence are not identical to the factors associated with moving from one state to another, and 2) the factors that influence transitions to abstinence are not the same as those that influence changes to sexual activity.

Recognizing the differences between factors that may be used to infer abstinence states and those associated with transitions is important to the fields of public health and health education. Currently, the majority of sexual health education funding promotes abstinence as the most important strategy for young women to protect reproductive health. However, application of a generic message that ignores the current state of sexual activity has been described as ineffective. Too often, young women that have been sexually active at some point in the past regard these messages

as not applicable. The data from this study suggest that, not only do sexual health education messages need to be appropriate to current state of sexual activity (not previous states), but that separate messages may need to be developed for young women in high versus poor quality relationships.

Application or delivery of interventions or sexual health curricula would then be dependent on estimating which young women should receive which message. The analysis of the cross-sectional data may be useful for inference of abstinence states and thus appropriate targeting of health education programs.

Understanding the factors that influence abstinence state change is more likely to be of use to healthcare providers who provide reproductive counseling to young women. The data presented here may be applicable in those populations that are in most need of these services: young women of disadvantaged social economic status. The data should be applied by considering the questions asked when obtaining sexual histories. In these settings that are confidential, clinicians have less need to be able to predict abstinence states, but should be more concerned with understanding the likelihood of transitions and what that may mean to the young woman in terms of risk of STI or unwanted pregnancy. For example, if a young woman is seen in a healthcare setting and is neither pregnant nor has an STI, she is unlikely to obtain one in the immediate future if she is 1) currently abstinent with all partners, and 2) not likely to transition to sexual activity with any partners. Therefore, understanding the factors that

influence the likelihood of transitioning to sexual activity provides the clinician with specific avenues to discuss. In this situation, a clinician should ask about specific partnerships and attempt to elicit the relationship quality and current abstinence state within each partnership. Based on the information obtained, the counseling message, whether condom use, contraception and/or abstinence, should be targeted to the likelihood of future states within those partnerships.

It is important to remember that the median number of sexual partners at any given time in this population of young women at high risk for STI and unwanted pregnancy was 1. This suggests that management of these women's risk would not be complicated by the need to understand numerous relationships and abstinences states. However, relationships do change in any adolescent population and therefore the need remains to evaluate relationship quality and abstinence state at each visit. Additionally, there are a proportion of young women that are in multiple partnerships at any given time and sexual health promotion messages should be developed for this group.

Recommendations

- ◆ Develop appropriately targeted sexual health education materials.

Messages should be appropriate for age group, current state of sexual activity (which would ideally be expanded beyond coitus-only measures) and relationship-specific factors. Messages

should be designed to encourage state transitions where appropriate.

- ◆ Develop an algorithm using easily measured factors that would allow estimation of which students that should receive which messages, programs or interventions. Such an algorithm should always include current age as this was a consistently important factor in all models. Sexual conservatism is the other stable personality characteristic that should be incorporated into the decision tree. Relationship involvement and quality should also be considered as contextual factors that play an important role in the prediction of abstinence state.
- ◆ Develop instruments for clinicians to use during collection of sexual history. These should include measures of number of current partners, partner-specific relationship quality measures, sexual activities within those partnerships and a measure of sexual conservatism. It would be useful for clinicians to evaluate emotional and sexual desire motivations within partnerships as well, but this is unlikely to occur without intensive education efforts aimed at increasing clinician comfort with dealing with sensitive sexuality-related issues.
- ◆ Develop interventions for promoting sexual and reproductive health that take into account both the personality and contextual

factors that influence young women's sexual decision-making processes.

- ◆ Additional studies are needed in the field of sexual behaviors in order to provide a better foundation for health education programs and public health interventions aimed at improving sexual and reproductive health of young women in the US. There are several gaps that remain in our knowledge of sexual decision-making processed in young women: the complex interaction of relationship quality and motivations for coitus; why abstinence states change within partnerships; and, relationship dynamics.

Summary

Understanding relationship quality is important to understanding the likelihood that women are currently abstinent or may become abstinent in the near future. Young women are more likely to act on sexual desire and emotional motivations for coitus when in high quality relationships. This suggests that understanding the partnerships in which women are engaged can provide educators and health practitioners with useful information. Sexual and reproductive health messages should be differentially targeted to young women depending on the quality of their relationships and their current level of sexual activity within each of those relationships.

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Appendix A

HUMAN SUBJECTS PROTECTION

IUPUI AND CLARIAN INSTITUTIONAL REVIEW BOARD
CONTINUING REVIEW (IRB-05)

DUE DATE: 5/11/07x

IRB STUDY NUMBER: 9802-07

Principal Investigator: Donald P. Orr, M.D.

Department: Pediatrics, Adolescent Med.

Building/Room No.: XE 070

Phone: 317-274-8812

E-Mail: dporr@iupui.edu

Contact Information: Name: same

Address: XE 070

Phone:

Fax:

E-Mail:

Study Title: Risk and Protective Factors for Sexually Transmitted Infections/Training in Sexually Transmitted Diseases including HIV

Sponsor/Funding Agency: National Institutes of Health/NIAID Grant/Sponsor No.: /

SECTION I: CURRENT STUDY STATUS

The study status must be ONGOING if either of the 2 is true: (1) Interaction or intervention with subjects, including follow-up, continues and/or (2) Identifiable private information is being accessed.

- ☒ ONGOING – Date initiated: 3/1998
- ☐ ONGOING – Will be initiated, Anticipated date:
(Skip to Section IV and complete the rest of the form)
- ☐ ONGOING – Permanently closed to subject enrollment, DATA ANALYSIS ONLY (NOTE: If you and/or the sponsor will require access to private, identifiable information, the study must remain "ONGOING." If however, the sponsor is doing data analysis only and will not require you to access private, identifiable information or contact with subjects, you may request that the study be considered "COMPLETED" – see below).
- ☐ ONGOING – Permanently closed to subject enrollment, RESEARCH INTERACTION OR INTERVENTION CONTINUES (this includes follow-up)
- ☐ Check here if subjects will be required to reconsent and/or reauthorize. (You will need to attach the current informed consent and authorization with this continuing review form).
- ☐ Check here if subjects will NOT be required to reconsent and/or reauthorize and to certify that the information provided in the summary safeguard statement (SSS), which must be attached with this continuing review form, is up-to-date and accurate.
- ☐ WILL NOT BE INITIATED – Explain: _____
(Skip to investigator signature under Section VI)
- ☐ COMPLETED – Date: _____
- ☐ CLOSED PRIOR TO COMPLETION – Date: ___, Explain: _____

If applicable, explain what will happen to samples/tissues/data collected as part of the research study: _____

SECTION II: SUBJECT SUMMARY

- ☒ Check here if your study utilizes records or specimens versus human subjects. When the form asks for the number of subjects, document the number of subjects for which data/specimens have been collected.

1. ACCRUAL

		All Sites		On-Site	
		1300*		1300*	
Actual	Since last IRB review	Number of subjects CONSENTED/ENROLLED			31
		Number of subjects who FAILED SCREENING (e.g. found ineligible to participate)			0
		Number of subjects who have WITHDRAWN from the study			0

«STUDY_NUMBER»

1

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Since beginning of study	Number of subjects CONSENTED/ENROLLED	891
	Number of subjects who FAILED SCREENING (e.g. found ineligible to participate)	1**
	Number of subjects who have WITHDRAWN from the study	26
	Number of ACTIVE subjects	789
	Number of subjects who have COMPLETED the study	76

* 500 adolescent women; 300 partners; 500 parents; **never enrolled

2. WITHDRAWAL

Have any subjects withdrawn from the study since the last IRB review?

☒ No

☐ Yes, state the reasons for them: _____

3. JUSTIFICATION FOR STUDY CONTINUATION – Only complete if the study remains open to subject enrollment

Have subjects accrued in the study since the last IRB review?

☒ Yes

☐ No, justify study continuation: _____

4. Check if any accrued subjects are:

☒ Children

☐ Prisoners

☐ Cognitively Impaired

☒ Pregnant Women and Fetuses

☒ Economically/Educationally Disadvantaged

☐ Students

If any of the above populations have been accrued, was this previously approved by the IRB?

☐ No. Submit an amendment to the study to request the inclusion of the group of subjects checked above.

☒ Yes.

SECTION III: ETHNIC/RACIAL REPORTING REQUIRED FOR FEDERALLY-SPONSORED STUDIES

Indicate the ethnic and racial categories for subjects accrued to date for all federally-sponsored (e.g. NIH, VA, CDC, etc.) studies or studies conducted at the VA or using VA subjects. The numbers should reflect subjects on-site.

SUBJECT ACCRUAL				
Ethnic Category	Sex/Gender			Total
	Females	Males	Unknown or Not Reported	
Hispanic or Latino	7	3		10
Not Hispanic or Latino	593	282		875
Unknown (Individuals Not Reporting Ethnicity)	3	3		6
Ethnic Category Total of All Subjects*	603	288		891
Racial Categories				
American Indian/Alaska Native	1	0		1
Asian	0	1		1
Native Hawaiian or Other Pacific Islander	0	0		0
Black or African American	521	249		770
White	64	30		94
More Than One Race	14	5		19
Unknown or Not Reported	3	3		6
Racial Categories Total of All Subjects*	603	288		891

If ETHNIC and RACIAL category totals are not equal, please explain: _____

Have there been any unexpected difficulties accruing subjects in a particular category (including children and women)?

☒ No.

☐ Yes. Please explain: _____

«STUDY_NUMBER»

2

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FOR VA STUDIES ONLY (i.e. all studies conducted at the VA or using VA patients). For the total number of subjects noted in the table above, include the total number in the following categories (state "0" if there have been none enrolled):

Children:
Cognitively Impaired:
Economically/Educationally Disadvantaged:
Pregnant Women and Fetuses:
Prisoners:
Students:

SECTION IV: SUMMARY OF EVENTS

IV.A. Did any events that require prompt reporting to the IRB occur **since the last IRB review** (Refer to 4.5 of the Unanticipated Problems Involving Risks to Subjects or Others and Noncompliance SOP for a list of events that require prompt reporting to the IRB, hereafter referred to as THE LIST)?:

- ☒ No.
☐ Yes. Were these events reported previously to both the IRB and VA, if applicable?
☐ No. Please explain: _____
☐ Yes. Provide a SUMMARY of these events: _____
☐ Check here if the SUMMARY is attached.

IV.B. Provide a summary of all other events not on THE LIST (e.g. adverse events, protocol deviations, problems, complaints, etc.) that occurred **on-site since the last IRB review** (The summary should include events not on THE LIST that represent an increase in severity or frequency over what is known or expected): _____

- ☐ Check here if SUMMARY is attached.
☒ Check here if no other events occurred

IV.C. Is there a Data Safety Monitoring Board for this study?

- ☒ No.
☐ Yes. Provide the most recent monitoring report or explain: _____

IV.D. Based on the above information, do you feel the validity of the data is affected?

- ☒ No.
☐ Yes. Explain: _____

IV.E. Based on the above information, do you feel there is a significant increase in risk to subjects or others or in the frequency or severity of adverse events, protocol deviations, problems, complaints, etc. since the last IRB review?

- ☒ No.
☐ Yes. Explain: _____

SECTION V: SUMMARY

V.A. Provide a summary of the study's progress (e.g. information about study results or trends):

Excellent progress; new subjects enrolled since last progress report represent only new partners of previously enrolled subjects; no additional adolescent women enrolled as primary subjects; 1 women enrolled as sexual partner. (see attached publications)

V.B. Provide a summary of actual benefits experienced by accrued subjects (on-site): intensive surveillance for sexually transmitted infections with treatment

V.B.1. If unknown or not applicable, explain: _____

V.C. If any recent literature has been published or presented by you or others since the last IRB review, has it demonstrated a significant impact on the conduct of the study or the well-being of subjects?

- ☒ N/A. There has not been any recent literature published or presented since the last IRB review.

«STUDY_NUMBER»

- ☐ No.
☐ Yes. Attach a copy or explain: _____

V.D. Have there been any audits from a federal agency conducted since the last IRB review that identified unanticipated problems involving risks to subjects or others?

- ☒ No.
☐ Yes. Attach the report(s).

V.E. Are you collaborating with any UNAFFILIATED investigators?

- ☒ No.
☐ Yes. Identify the investigator(s) and explain their role(s) in the study: _____

Is an Unaffiliated Investigator Agreement in place?

- ☐ No. Submit an amendment to add one, or explain why one is not needed: ____
☐ Yes.

V.F. Have any conflicts of interest arisen since the last IRB review, which have not been previously reported to the IRB and (if applicable) to the VA Financial Conflict of Interest committee (using VA Form 10-1313-14)?

- ☒ No.
☐ Yes. Explain: _____

V.G. Do you believe the risk:benefit ratio has changed based on all of the information provided on this form and any attachments?

- ☒ No.
☐ Yes. Explain: _____

SECTION VI: ATTACHMENTS

- | | |
|---|--|
| <input checked="" type="checkbox"/> Informed Consent | <input checked="" type="checkbox"/> Publications |
| <input checked="" type="checkbox"/> Summary Safeguard Statement | <input type="checkbox"/> National Summary Reports |
| <input checked="" type="checkbox"/> Authorization | <input type="checkbox"/> Audit Reports |
| <input type="checkbox"/> Recruitment Materials | <input checked="" type="checkbox"/> Protocol |
| <input type="checkbox"/> DSMB report | <input type="checkbox"/> Other, Description: _____ |

REQUIRED ATTACHMENTS:

STUDY STATUS	SSS	Recruitment Checklist	ICS/ Assent	AUTH	Advertise-ments	PROTOCOL
ONGOING	X ¹	X	X	X	X	X ⁴
ONGOING, Permanently closed to subject enrollment	X ²		X ³	X ³		X ⁴
WILL NOT BE INITIATED						
COMPLETED						
CLOSED PRIOR TO COMPLETION						

- Must submit version 06/05 or later of the summary safeguard statement.
- Can submit any version of the summary safeguard statement as long as the information provided within is up-to-date and accurate.
- Only need to submit if subjects will be reconsented and/or reauthorized (ONGOING – Permanently closed to subject enrollment status only).
- Must submit a copy of the current COMPLETE protocol (which incorporates all amendments) for all ONGOING studies and studies that are ONGOING, Permanently closed to subject enrollment, which still include ACTIVE subjects if the IRB does not have a current, complete protocol. For example, if a study amendment that affected the protocol was approved since the last IRB review and the complete, revised protocol was not submitted with that amendment (e.g. only updated pages of the protocol were submitted), a current and complete protocol must be submitted with the continuing review.
- The following must be submitted, unless previously reported to the IRB:
 - Publications (any publications or abstracts derived from the study since the last IRB review), if applicable. (See V.C. of the form)
 - National Summary Reports (findings from multi-center study group) since the last IRB review, if applicable.
 - Audit Reports, if applicable (See V.D. of the form)

«STUDY_NUMBER»

- Interim Findings
- Summaries (e.g. events that require prompt reporting to the IRB, as referenced in IV.A of this form).

Your signature certifies that this study has been and will continue to be conducted in full compliance with the IRB-approved protocol, HHS/FDA regulations and the IUPUI/Clarian policies governing human subject research. You also certify that the information contained on or with this form is accurate.

E-MAILED MAY 10 2007

Signature of Principal Investigator: _____ Date: 5/10/07

SECTION VII: IRB APPROVAL	
*** For Office Use Only ***	
Type of review:	<input checked="" type="checkbox"/> Full Board <input type="checkbox"/> Expedited, Category: _____
IRB Reviewer: <input type="checkbox"/> Check here to confirm that the most recent informed consent statement has been reviewed and no additional information needs to be provided to subjects based on any new findings.	
STATUS OF STUDY: (RCA staff to indicate) <input checked="" type="checkbox"/> ONGOING: This continuing review has been reviewed and approved by the IUPUI/ Clarian Institutional Review Board (IRB). Based on the criteria for determining the frequency of continuing review and the level of risk, this study will expire on: <u>JUN 27 2008</u> . If the study is not re-approved prior to that date all research activities must cease on that date, including enrollment of new subjects, intervention on current participants, and analysis of identified data.	
<input type="checkbox"/> COMPLETED/CLOSED: This close-out report has been reviewed and accepted by the IUPUI/Clarian Institutional Review Board (IRB).	
Authorized IRB Signature: _____	IRB Approval Date: <u>7/27/07</u>

Recorded in the Minutes of:

AUG 22 2007

5

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Appendix B
Supplementary Data Tables

Table S1. Reliability of Scales Used in the Abstinence State Analyses

	Construct	Variables	Frequency (n)	Reliability (Cronbach's α)	Proposed Model
Stable personality characteristic	Sexual Conservatism	MARAGE34 OLDER34 INLOVE34 VIRGIN34	Annual (364)	.72	Mediator of Sexual Self- Efficacy
	Religiosity	RELGTECH BELIEVE RELGBELF PRAYER	Annual (365)	.77	
Partner-specific	Sexual Self- Efficacy	SAYNOP ADVNTGP OOCTRLP ABTSEXP ABTCNDP ABTBCP	Quarterly (269)	.82	Mediator of probability of Abstinence state change
	Emotional Motivation for Coitus	STGTHNP NEEDP LOVEDP RELAXP WITHP INLUPP CLOSERP	Quarterly (267)	.85	
	Sexual Desire for Coitus	FEELP SEXYP IWANTP	Quarterly (267)	.70	Moderators of effect of Relationship Quality on probability Abstinence state change
	Coitus for Thrill	FORFUNP THRILLP NOELSEP	Quarterly (267)	.59	
	Relationship Quality	STRONP SPENDP IMPORTP HAPPYP USTANDP LOVEP	Quarterly (269)	.91	Direct effect on probability of Abstinence state change
	Sexual Relationship Satisfaction	SXRLBGP SXRLUPP SXRLNPP SXRLUSP SXRLWVP	Quarterly (added in last phase of study n=77)	.93	

Table S2. Significant Correlations Among Constructs in Baseline Analysis
[Pearson's Correlation (p-value)]

Construct (n)	Religiosity	Sexual Self- Efficacy	Emotional Motivation for Coitus	Desire for Coitus	Coitus for Thrill	Sexual Relationship Satisfaction
Age (267)	n.s. [†]	n.s.	n.s.	.167 (.006)	n.s.	n.s.
Relationship Quality (267)	n.s.	.357 ($<.001$)	.376 ($<.001$)	.240 ($<.001$)	n.s.	.503 ($<.001$)
Sexual Conservatism (267)	.367 ($<.001$)	.139 (.023)	n.s.	-.159 (.009)	n.s.	n.s.
Religiosity (267)	1	.171 (.005)	n.s.	n.s.	-.135 (.027)	n.s.
Sexual Self- Efficacy (267)		1	n.s.	n.s.	-.130 (.033)	.276 (.015)
Emotional Motivation for Coitus (267)			1	.612 ($<.001$)	.363 ($<.001$)	.234 (.040)
Desire for Coitus (267)				1	.547 ($<.001$)	.376 (.001)
Coitus for Thrill (267)					1	n.s.
Sexual Relationship Satisfaction (77)						1

[†]Not significantly correlated. For clarity, only significant findings are shown.

Table S3. Significant Correlations Among Constructs in Markov Model Analysis [Pearson's Correlation (p-value)]							
Construct (n)	Religiosity	Relationship Length	Sexual Self-Efficacy	Emotional Motivation for Coitus	Desire for Coitus	Coitus for Thrill	Sexual Relationship Satisfaction
Age (1777)	.06 .01	.44 <.001	n.s. [†]	.14 <.001	.21 <.001	.16 <.001	-.06 .03
Relationship Quality (1771)	.05 .03	n.s.	.27 <.001	.46 <.001	.25 <.001	n.s.	.48 <.001
Sexual Conservatism (1751)	.35 <.001	-.06 .02	n.s.	n.s.	-.06 .01	-.13 <.001	n.s.
Religiosity (1754)	1	n.s.	.06 <.01	n.s.	n.s.	-.06 .01	-.06 .04
Relationship Length (1773)		1	n.s.	.15 <.001	.15 <.00	.16 <.001	-.13 <.001
Sexual Self-Efficacy (1769)			1	.27 <.001	.13 <.001	.06 <.01	.11 <.001
Emotional Motivation for Coitus (1768)				1	.64 <.001	.30 <.001	.23 <.001
Desire for Coitus (1768)					1	.11 <.001	.25
Coitus for Thrill (1768)						1	.09 <.01
Sexual Relationship Satisfaction (1127)							1





[†]Not significantly correlated. For clarity only significant correlations are shown

Appendix C

Participant Annual Questionnaire

Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

ALL DEFAULT = -1
ALL NO = 0
ALL YES = 1
UNLESS OTHERWISE NOTED

Shade circles like this: 
Not like this:  
Mark mistakes like this: 

1. Did you live with any of these people in the past year?

Mother	MOTHER1	<input type="radio"/> No	<input type="radio"/> Yes
Father	FATHER1	<input type="radio"/> No	<input type="radio"/> Yes
Stepmother	STEPM1	<input type="radio"/> No	<input type="radio"/> Yes
Stepfather	STEPF1	<input type="radio"/> No	<input type="radio"/> Yes
Grandmother	GRANDM1	<input type="radio"/> No	<input type="radio"/> Yes
Grandfather	GRANDF1	<input type="radio"/> No	<input type="radio"/> Yes
Aunt or Uncle	ANTUNC1	<input type="radio"/> No	<input type="radio"/> Yes
Foster Parents	FOSTER1	<input type="radio"/> No	<input type="radio"/> Yes
A boyfriend	BOYFRND1	<input type="radio"/> No	<input type="radio"/> Yes

2. Is your mother living?

☐ No ☐ Yes

MOMLIV

3. Is your father living?

☐ No ☐ Yes

DADLIV

4. How much time do you have at home when your parents aren't there, like after school and on weekends?

- ☐ 1 None
☐ 2 Less than an hour every day
☐ 3 About an hour every day
☐ 4 1 - 3 hours every day
☐ 5 4 hours or more, every day

TIME4






5. About how many girls your age have ever had sex?

- ☐ None
☐ A few
☐ About half
☐ Almost all

1
2
3
4

SEX5

Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this:  
Mark mistakes like this:  

6. About how many of your female friends have ever had sex? **SEX6**

- 1** ☐ None
2 ☐ One or two
3 ☐ About half
4 ☐ Almost all

7. How many of your friends smoke cigarettes? **SMOKE7**

- 1** ☐ None
2 ☐ Some of them
3 ☐ Most of them
4 ☐ All of them





8. How many of your friends drink alcohol? **ETOH8**

- ☐ None **1**
☐ Some of them **2**
☐ Most of them **3**
☐ All of them **4**

9. How many of your friends use marijuana? **THC9**

- ☐ None **1**
☐ Some of them **2**
☐ Most of them **3**
☐ All of them **4**

Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this:  
Mark mistakes like this: 

10. There are different kinds of sexual contact besides sexual intercourse. Please mark the ones that you have done anytime in your life, **even if you have never had sexual intercourse.**

My partner touched my breasts	BREASTS	<input type="radio"/> No	<input type="radio"/> Yes
I touched my partner's private parts	PTRPARTS	<input type="radio"/> No	<input type="radio"/> Yes
My partner touched my private parts (some people call this "getting felt up")	MYPARTS	<input type="radio"/> No	<input type="radio"/> Yes
Deep kissing (some people call this "French kissing")	DEEPKISS	<input type="radio"/> No	<input type="radio"/> Yes
Put my mouth on my partner's private parts (some people call this "going down" or "blow-job")	MYMOUTH	<input type="radio"/> No	<input type="radio"/> Yes
Really sexy dancing (some people call this "bump and grind" or "dirty dancing")	DANCING	<input type="radio"/> No	<input type="radio"/> Yes
My partner put his penis in my butt (some people call this "anal sex")	ANALSEX	<input type="radio"/> No	<input type="radio"/> Yes
My partner put his penis in my vagina (other words for this are "doing it" or "sexual intercourse")	VAGNLSEX	<input type="radio"/> No	<input type="radio"/> Yes
My partner put his mouth on my private parts (some people call this "oral sex" or "going down")	HISMOUTH	<input type="radio"/> No	<input type="radio"/> Yes

11. Have you ever had sexual intercourse in your life? **INTERLIF**
☐ No ☐ Yes

12. How many people have you had sex with **in your entire life?**

--	--	--

people

PTRLIFE
default = BLANK

13. How many people have you had sex with **in the past year?**




--	--	--

people





PTRYEAR
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


Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

value:
1 2 3




14. In the past six months, have you:	<u>Not At All</u>	<u>A Little</u>	<u>A Lot</u>
Just felt really down about things?	 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Felt pretty hopeless about the future?	 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Spent a lot of time worrying about little things?	 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Just felt depressed about life in general	 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. How often in the past six months have you:	<u>Hardly Ever</u>	<u>Several Times</u>	<u>Often</u>
Done something dangerous just for the thrill of it?	 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Done some risky things because it was a real kick?	 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taken chances with your safety because it was exciting?	 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Go to the next page






Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

The next part is about how you feel about your body and about sex. Please mark the statement that is best for you, **even if you have never had sexual intercourse**. Please mark only one answer for each statement.

	value:			
	1	2	3	4
	Strongly Disagree	Disagree	Agree	Strongly Agree
16. I like the ways in which I express my sexuality	<input type="radio"/> EXPRES16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I really like my body	<input type="radio"/> BODY16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish I were sexier	<input type="radio"/> SEXIER16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I am a desirable person	<input type="radio"/> DESIRA16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I become turned on about sex very easily	<input type="radio"/> EASILY16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I find that I can feel sexually excited in a wide variety of situations	<input type="radio"/> EXCITE16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Getting turned on about sex is not as powerful an experience as people say it is	<input type="radio"/> NPOWER16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be willing to try most kinds of sex at least once	<input type="radio"/> MOST16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There are some kinds of sex I would never do with anyone	<input type="radio"/> NEVER16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be interested in trying a wide variety of sexual activities	<input type="radio"/> TRY16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How I feel about my sexuality is an important part of my happiness	<input type="radio"/> HAPPY16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having sex seems very important to others but I don't really see what the big deal is	<input type="radio"/> NOTIMP16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would be open to new and different sexual experiences	<input type="radio"/> DIFFER16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My feelings about sex are an important part of who I am	<input type="radio"/> FEEL16	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

17. During the past **three months**, how often did you drink alcohol? **ETOH2MO**

- ☐ Every day
- ☐ Two to five days a week
- ☐ Once a week
- ☐ Two or three times a month
- ☐ Not at all

1
2
3
4
5

18. Think of all the times you had a drink in the past **three months**. **DRINK2MO**
How much did you usually drink each time?

- ☐ Six or more cans of beer, glasses of wine or drinks of liquor
- ☐ Three to five
- ☐ Two
- ☐ One
- ☐ I didn't drink anything in the past 3 months

1
2
3
4
5

19. How often have you used marijuana **in your entire life**? **THCLIFE**

- ☐ Never
- ☐ Once
- ☐ A few times
- ☐ Pretty often
- ☐ Very often

1
2
3
4
5




20. In the past **three months**, how often have you used marijuana? **THC2MON**

- ☐ Never
- ☐ Once
- ☐ A few times
- ☐ About once a week
- ☐ About every day

1
2
3
4
5



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Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

These next questions are about unwanted sexual activity after you were 12 years old.

"Unwanted" means any kind of sex that you didn't agree to, even if it was with someone you knew.

value: 1 2 3
Never Once Two Times or More

21.

How often has someone used physical force (like punching you or holding you down) to make you have sex?

☐ **FORCE** ☐

How often has someone used a weapon (like a gun or a knife) to make you have sex?

☐ **WEAPON** ☐

How often have you had sex with someone because you were afraid of them?

☐ **AFRAID** ☐

How often have you had sex when you really didn't want to?

☐ **NTWNTTO** ☐

22. Does your school have any kind of sex education class?

SEXEDU

☐ No ☐ Yes

23. Does your school have any kind of class about how to keep from getting AIDS?

AIDSEDU

☐ No ☐ Yes

24. Does your school have any kind of class about sexually transmitted diseases?

STDEDU

☐ No ☐ Yes

25. Has anyone in your school ever talked about the importance of abstaining from sex?

value:

☐ 0 No ☐ 1 Yes- once or twice ☐ 2 Yes- lots of times

SCHABST

26. Has anyone in your school ever talked about using condoms to prevent AIDS and sexually transmitted diseases?




value:

☐ 0 No ☐ 1 Yes- once or twice ☐ 2 Yes- lots of times

SCHAIDS



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Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

27. These next questions are about how your parents or the people you live with feel about sex and teenagers. Please say whether you Strongly Disagree, Disagree, Agree or Strongly Agree with each statement. **Please choose only one for each statement.**

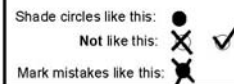
	<u>value:</u> 1	2	3	4
	<u>Strongly</u> <u>Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly</u> <u>Agree</u>
My parents think that it is morally wrong for teenagers to have sex before marriage.	WRONG27 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents think that sex is too dangerous for teenagers.	DANGER27 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents think that teenagers are too immature to have sex	IMMAT27 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents think that sex before marriage is okay if the people care for each other.	OKCARE27 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents think that sex before marriage is okay if the people love each other.	OKLOVE27 <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

28.

	<u>value:</u> 1	2	3	4	5
	<u>All the</u> <u>Time</u>	<u>Often</u>	<u>Sometimes</u>	<u>Hardly</u> <u>Ever</u>	<u>Never</u>
When you go out, how often do your parents tell you what time to be home?	<input type="radio"/> TIME28	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do your parents ask where you are going?	<input type="radio"/> GOING28	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do you tell your parents you are going out before they ask?	<input type="radio"/> ASK28	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do your parents ask who you are going out with?	<input type="radio"/> WITH28	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Mid-America Adolescent STD Center
Young Women's Project
Questionnaire



These next few questions are about your relationships with your parents and friends. Please mark the circle that best describes how you feel.

29. How often do your parents (or the adults you live with) show interest in what you think or in how you feel about different things?

☐ Almost always ☐ Much of the time ☐ Once in a while ☐ Almost never

30. When you have problems with your health, can you talk them over with your parents?

☐ Almost always ☐ Much of the time ☐ Once in a while ☐ Almost never

31. When you have personal problems, can you talk them over with your parents?

☐ Almost always ☐ Much of the time ☐ Once in a while ☐ Almost never

32. How many of your friends abstain from sex so they won't get pregnant?

☐ None ☐ Some of them ☐ Most of them ☐ All of them

33. How many of your friends abstain from sex so they won't get a sexually transmitted disease?




☐ None ☐ Some of them ☐ Most of them ☐ All of them

34. Please mark the best answer for you. Mark just one answer for each question.

How important is it to you:	<u>Not Important</u>	<u>Important</u>	<u>Very Important</u>
To wait to have sex until marriage?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To wait to have sex until you are older?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To wait to have sex until you are in love?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be considered a virgin?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

35. Just mark one answer for each of the next statements.




	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
Sometimes in sexual situations I worry that things will get out of hand.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I am in a sexual situation, I feel confused about what I want to happen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I worry about being taken advantage of sexually.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In sexual situations, I am comfortable and sure about what to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sometimes it is difficult for me to relax in sexual situations.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

36.

<u>How wrong is it:</u>	<u>Not Wrong</u>	<u>A Little Wrong</u>	<u>Wrong</u>	<u>Very Wrong</u>
To start a fight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To shoplift from a store?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To lie to a teacher?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To take things that don't belong to you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To stay out all night without permission?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To damage school property on purpose?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To lie to your parents?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To skip school?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To hit someone because you didn't like what they said?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To damage someone else's property?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

37. Please mark one answer for each of the next questions.




How important is it to you:	<u>Not Important</u>	<u>Important</u>	<u>Very Important</u>
To rely on religious teachings when you have a problem?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To believe in God?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To rely on your religious beliefs as a guide for day-to-day living?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To be able to pray when you're facing a personal problem?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

38.

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
I feel that I'm a person of worth, at least on an equal plane with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have a number of good qualities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All in all, I am inclined to feel I am a failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to do things as well as most other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I do not have much to be proud of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take a positive attitude about myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
On the whole, I am satisfied with myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish I could have more respect for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I certainly feel useless at times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times I think I am no good at all.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

39. How do you feel about going to school?

- ☐ I don't like it very much
☐ It's okay
☐ I like it a lot

40. How do you feel about your teachers?

- ☐ I don't like most of them
☐ They're okay
☐ I like most of them

41. Mark the best answer about how you feel about school.

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
I'm learning a lot from being in school.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being in school makes me feel good about myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
School helps me learn things I'll need to know later in life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doing well in school is important to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

42. Do you belong to any school clubs or organizations?

- ☐ No ☐ Yes ☐ Yes, two or more

43. Do you belong to any community groups?




- ☐ No ☐ Yes ☐ Yes, two or more

44. Do you do any kind of volunteer work in the community?

- ☐ No ☐ Sometimes ☐ Often



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Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

45. The next questions are about how you feel about condoms. Please mark whether you Strongly Disagree, Disagree, Agree or Strongly Agree with each statement. **Please make one mark for each statement.**




	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
Most of my friends think it's embarrassing to talk about condoms.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most people my age never use condoms if they have sex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Most of my friends think condoms are too much trouble.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
When I suggest using a condom, I am almost always embarrassed.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is really hard to bring up the issue of using condoms to my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is easy to suggest to my partner that we use a condom.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm comfortable talking about condoms with my partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I never know what to say when my partner and I need to talk about condoms or other protection.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

46. What are your chances of getting a sexually transmitted disease sometime in the next three months?

- ☐ I will probably get a sexually transmitted disease sometime in the next year
☐ About 50-50 chance
☐ No chance at all



Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 




47. Before today, have you **ever** had any of the following infections? If you have had one of these infections, please mark whether it was one time or more than one time.

	No	Yes, Just one time	Yes, More than one time
Gonorrhea	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Chlamydia	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trichomonas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Syphilis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PID (infection in tubes/ovaries)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Herpes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Genital Warts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Yeast	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Bacterial Vaginosis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

48. Please mark just one answer to the following statements.

	Strongly Disagree	Disagree	Agree	Strongly Agree
My parents would think teenagers should use condoms if they have sex	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents would help me get condoms If I asked.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents would be upset if they found condoms in my purse.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents would help me get checked for sexually transmitted diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents would come with me if I needed to get checked for sexually transmitted diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It would be easy to tell my parents if I had a sexually transmitted disease.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Mid-America Adolescent STD Center
Young Women's Project
Questionnaire

Shade circles like this: 
Not like this: 
Mark mistakes like this: 

49. Please mark the best answer for you after each statement.

	<u>Never</u>	<u>Once</u>	<u>A Few Times</u>	<u>Many Times</u>
My parents have talked to me about using condoms.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents have told me that they have used condoms.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents have talked to me about safe sex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents have talked to me about abstaining from sex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents have talked to me about birth control	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents have talked to me about the kind of birth control <i>they</i> use.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents have talked to me about sexually transmitted diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My parents have talked to me about AIDS.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

50. How often do you think your parents have sex?

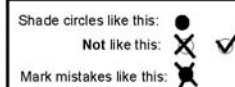
☐ Never ☐ Every once in a while ☐ Pretty often ☐ Very often

51. Have you ever had a blood test for the virus that causes AIDS (some people call this an HIV or AIDS test)?

☐ No ☐ Yes, once ☐ Yes, two times or more



Mid-America Adolescent STD Center
Young Women's Project
Questionnaire



52. The last questions are about what you think about condoms. Please mark only one answer for each statement.

	<u>Strongly Disagree</u>	<u>Disagree</u>	<u>Agree</u>	<u>Strongly Agree</u>
Condoms are a good method of birth control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condoms are a good method for prevention of AIDS and other sexually transmitted diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condoms are a good form of birth control.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condoms often break during sex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condoms give good protection from diseases.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condoms can make sex more stimulating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condoms ruin sex.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condoms are uncomfortable.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condoms are fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condoms are too much trouble.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Using a spermicide before sex takes too much time.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Women should use a spermicide even if their partner doesn't know about it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If a woman uses a spermicide, it means she doesn't trust her sex partner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

That's all of the questions. Thanks for your help!



Appendix D

Participant Quarterly Interview Instrument

Young Women's Project
Subject Interview
(Form ID 24166)



ID_VISIT

Interviewer

INTERVWR

☐ CLS ☐ ET ☐ MC
☐ PB ☐ JR ☐ MP ☐ JW ☐ JH-W ☐ Other

Interview Date

/

/

INTRVWDT

Date of Birth

/

/

DOB

Site

SITE

☐ NA
☐ FM
☐ GC
☐ Other

IU Division of Biostatistics
Project 6F
Revised April 28, 2004

24166

TABLE = INTERVIEWS



Young Women's Project
Subject Interview
(Form ID 24166)



First, we want to learn about your family.

* 1. Not at all close 2. A little close 3. Very close

** 1. Never 2. Sometimes 3. Often

	People you've lived with in the past year	How close do you feel to...*			How often do you talk about personal things with...**			How often do you talk about sexually transmitted diseases with...**		
		1	2	3	1	2	3	1	2	3
Mother	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Step-Mother	SMTHRLIV	SMTHRCLO	SMTHRCLO	SMTHRCLO	SMTHRPER	SMTHRPER	SMTHRPER	SMTHRSTD	SMTHRSTD	SMTHRSTD
Father	FATHRLIV	FATHRCLO	FATHRCLO	FATHRCLO	FATHRPER	FATHRPER	FATHRPER	FATHRSTD	FATHRSTD	FATHRSTD
Step-Father	SFTHRLIV	SFTHRCLO	SFTHRCLO	SFTHRCLO	SFTHRPER	SFTHRPER	SFTHRPER	SFTHRSTD	SFTHRSTD	SFTHRSTD
Grandmother	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Grandfather	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Older Sisters	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Younger Sisters	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Older Brothers	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Younger Brothers	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Aunts/Uncles	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Cousins	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Spouse	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Your own children	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Boyfriend/Girlfriend	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Foster Parent	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD
Group Home	MOTHLIV	MOTHRCL	MOTHRCL	MOTHRCL	MOTHRPER	MOTHRPER	MOTHRPER	MOTHRSTD	MOTHRSTD	MOTHRSTD



Young Women's Project
Subject Interview
(Form ID 24166)



Transfer names to sexual network
sheet and to diary

		<input type="radio"/> F1	<input type="radio"/> F2	<input type="radio"/> F3	<input type="radio"/> F4	<input type="radio"/> F5	<input type="radio"/> F6	<input type="radio"/> F7
		RELAT_F1	RELAT_F2	RELAT_F3	RELAT_F4	RELAT_F5	RELAT_F6	RELAT_F7
Is your friend male or female? (1=Male; 2=Female)		<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2
GENDERF								
Have you ever had sex with this friend? (1=Yes; 2=No)		<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2	<input type="radio"/> 1 1 2
How well does your friend know... SEXF								
0. Don't know each other at all	Your Mother MOTHERF	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
	Your Father FATHERF	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
	Your Grandmother GRANDMF	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
	Your Older Sister SISTERF	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
	Your Older Brother BROTHERF	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
	Your Cousin COUSINF	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
	Spouse	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
How well does your friend know...								
TABLE = INTERVIEW		F12	F13	F14	F15	F16	F17	
0. Don't know each other at all	F1	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
	F2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
1. Know each other some	F3	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
	F4	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
2. Know each other very well	F5	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2
	F6	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2	<input type="radio"/> 0 0 1 2

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1. Strongly Disapproves, 2. Disapproves, 3. Approves, 4. Strongly Approves

	<input type="radio"/> F1	<input type="radio"/> F2	<input type="radio"/> F3	<input type="radio"/> F4	<input type="radio"/> F5	<input type="radio"/> F6	<input type="radio"/> F7
	OPIN_F1	OPIN_F2	OPIN_F3	OPIN_F4	OPIN_F5	OPIN_F6	OPIN_F7
We'd like to know how your friend feels about things for themselves . In your opinion, how does your friend feel about... Would you say she/he strongly disapproves, disapproves, approves or strongly approves? [show card]							
1...of using condoms CONDOME	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
2...of having sex with a [girl] boyfriend HAVESEX	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
3...of getting checked for STIs CHKSTD	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
4...of getting [a girl] pregnant PGNANT	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
5...of you getting pregnant at this time in your life PREGNOW	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
6...of using birth control CNTRL	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
7...of having a one-night stand STAND	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
8...of getting checked for AIDS CKAIDS	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
9...of having sex without a condom NOCNDM	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
10...waiting until marriage to have sex WAIT	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
11...of having sex if you're in love INLOVE	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4



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Genital Pain

Some women notice that anything touching their genital area causes discomfort or pain. Other women never experience these sensations. These next statements are about discomfort or pain in your genital area in the past two or three months. Please say whether you strongly disagree, disagree, agree or strongly agree as I read each statement.

	1 Strongly Disagree	2 Disagree	3 Agree	4 Strongly Agree	5 YWP Staff Only
Tampons are too painful for me to use	<input type="radio"/> GPTAMPON	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I've never tried to use tampons
It is painful if my partner touches my genital area	<input type="radio"/> GPPTRICH	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	My partner never touches my genitals
I almost always feel some pain during sexual intercourse	<input type="radio"/> GPDURSEX	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I've never had intercourse
I almost always feel some pain after sexual intercourse	<input type="radio"/> GPAFTSEX	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I've never had intercourse
Pelvic exams are almost always painful to me	<input type="radio"/> GPPELVIC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I've never had a pelvic exam
Some kinds of clothing cause pain in my genital area	<input type="radio"/> GPCLOTHS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I don't wear clothing
I avoid activities like bike riding because they cause pain in my genital area	<input type="radio"/> GPACTIVS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I've never done activities like this
Wiping with toilet paper causes pain in my genital area	<input type="radio"/> GPTP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	I never wipe with toilet paper

Genital Hygiene

Young women do different things to keep their genitals feeling clean. During the past two or three months, how often have you done any of these things?

	1 Never	2 Once	3 Twice	4 Three times or More
Douched after my period	<input type="radio"/> GHDOUCHE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used a feminine hygiene spray	<input type="radio"/> GHSPRAY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Douched before sex	<input type="radio"/> GHBERSEX	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Douched after sex	<input type="radio"/> GHAFTEX	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used powder	<input type="radio"/> GHPOWDER	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Washed with soap and water	<input type="radio"/> GHSANDW	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used a tampon	<input type="radio"/> GHTAMPON	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used a sanitary pad	<input type="radio"/> GHSANNAP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used a feminine wipe	<input type="radio"/> GHFEMWIPE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Used some vaginal medicine for yeast infections (cream, suppositories, pills)	<input type="radio"/> GHYSTCRM	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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Ideal Partner
I'm going to read some words that describe an ideal person you might go out with. As I read each one, tell me how important it is to you when you choose a partner.

	1 Not at All Important	2 A Little Important	3 Important	4 Very Important
A nice body	<input type="radio"/> NICEBODY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A cute face	<input type="radio"/> CUTEFACE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Dresses well	<input type="radio"/> DRESWELL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Good at sports	<input type="radio"/> GDSPTS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Smells nice	<input type="radio"/> SMELNICE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Always nice to me	<input type="radio"/> NICETOME	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Treats me with respect	<input type="radio"/> TRTRSPCT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Easy to talk to	<input type="radio"/> EASYTALK	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interested in things I'm interested in	<input type="radio"/> INTERSTD	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lives in my neighborhood	<input type="radio"/> LIVESNBH	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Believes in the same things I do	<input type="radio"/> SAMETHGS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Likes to have fun	<input type="radio"/> HAVEFUN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Able to express his/her feelings	<input type="radio"/> EXPSEMOT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has a good sense of humor	<input type="radio"/> SENSUMR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Likes kids	<input type="radio"/> LIKEKIDS	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Willing to take chances	<input type="radio"/> TAKCHANC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Able to take care of himself/herself	<input type="radio"/> TAKECARE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wants to get somewhere in life	<input type="radio"/> SOMEWHERE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intelligent	<input type="radio"/> INTELGNT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular with other people	<input type="radio"/> POPULAR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cares for others	<input type="radio"/> CAREOTHR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comes from a good family	<input type="radio"/> GDFAMILY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has a nice car	<input type="radio"/> NICECAR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has money	<input type="radio"/> HASMONEY	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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Birth Control

These are some different forms of birth control. Not all of these work well so be sure to ask your nurse or doctor if you have questions. During the past two or three months, which ones have you used, even just once?

default = 0
No = 0, Yes = 1

No Yes

If Yes,
Are you currently using?

default = 0
IF FILLED = 1

Withdrawal	<input type="radio"/> WITHDRWL <input type="radio"/>	<input type="radio"/> CNTRRHYM <input type="radio"/>
Do you avoid sex at certain times of the month to prevent pregnancy?	<input type="radio"/> RHYTHM <input type="radio"/>	<input type="radio"/> CNTRCNDM <input type="radio"/>
Condoms	<input type="radio"/> CONDOMS <input type="radio"/>	<input type="radio"/> CNTRCNDM <input type="radio"/>
Spermicides	<input type="radio"/> SPERMICID <input type="radio"/>	<input type="radio"/> CNTRCNDM <input type="radio"/>
Oral contraceptive pills	<input type="radio"/> OCP <input type="radio"/>	<input type="radio"/>
Depo-Provera	<input type="radio"/>	<input type="radio"/>
If yes, when was your last shot?	<input type="text"/> / <input type="text"/> / <input type="text"/>	
Contraceptive patch	<input type="radio"/>	<input type="radio"/>
Intra-uterine device (IUD)	<input type="radio"/>	<input type="radio"/>
Tubal ligation (tubes tied)	<input type="radio"/>	<input type="radio"/>
Emergency Contraception (Plan B or the morning after pill)	<input type="radio"/>	<input type="radio"/>
If yes, how many times in the past two or three months?	<input type="text"/>	
Diaphragm	<input type="radio"/>	<input type="radio"/>
Contraceptive ring (Nuva-ring)	<input type="radio"/>	<input type="radio"/>



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These next questions are personal questions about sex. Please remember that all of your answers are private. That means your personal information won't be shared with anyone.

There are different kinds of sexual things a person can do with a sex partner. Have you done any of these things...

1. Sexual Behaviors	...in your life?	...in the past two or three months?*
My partner touched my breasts	<input type="radio"/> BREASLIF <input type="radio"/> Yes	<input type="radio"/> BREAS2MO <input type="radio"/> Yes
I touched my partner's private parts	<input type="radio"/> PTRPTLIF <input type="radio"/> Yes	<input type="radio"/> PTRPT2MO <input type="radio"/> Yes
My partner touched my private parts (some people call this "petting" or "getting felt up")	<input type="radio"/> MYPTLIF <input type="radio"/> Yes	<input type="radio"/> MYPT2MO <input type="radio"/> Yes
Deep kissing (some people call this "French kissing")	<input type="radio"/> KISSLIF <input type="radio"/> Yes	<input type="radio"/> KISS2MO <input type="radio"/> Yes
Put my mouth on my partner's private parts (some people call this "going down" or "blow-job")	<input type="radio"/> MYMOULIF <input type="radio"/> Yes	<input type="radio"/> MYMOU2MO <input type="radio"/> Yes
My partner put his penis in my butt (some people call this "anal sex")	<input type="radio"/> ANALLIF <input type="radio"/> Yes	<input type="radio"/> ANAL2MO <input type="radio"/> Yes
Really sexy dancing (some people call this "bump and grind" or "dirty dancing")	<input type="radio"/> DANCELIF <input type="radio"/> Yes	<input type="radio"/> DANCE2MO <input type="radio"/> Yes
My partner put his penis in my vagina (other words for this are "doing it" or "sexual intercourse")	<input type="radio"/> INTERLIF <input type="radio"/> Yes	<input type="radio"/> INTER2MO <input type="radio"/> Yes
My partner put his/her mouth on my private parts (some people call this "oral sex" or "going down")	<input type="radio"/> HISMOULIF <input type="radio"/> Yes	<input type="radio"/> HISMO2MO <input type="radio"/> Yes

2. How old were you when you had sexual intercourse for the first time? **FIRSTSEX**
(only collected at yearly visits).

- | | | | | |
|--|----------------------------|----------------------------|-----------------------------|--------------------------------------|
| 1 <input type="radio"/> Never had sex | 4 <input type="radio"/> 12 | 7 <input type="radio"/> 15 | 10 <input type="radio"/> 18 | 13 <input type="radio"/> 21 or older |
| 2 <input type="radio"/> 10 years old or less | 5 <input type="radio"/> 13 | 8 <input type="radio"/> 16 | 11 <input type="radio"/> 19 | |
| 3 <input type="radio"/> 11 | 6 <input type="radio"/> 14 | 9 <input type="radio"/> 17 | 12 <input type="radio"/> 20 | |



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3. How many people have you had sexual intercourse with in your **whole life**? **SEXLIFE**

- | | | | | | |
|--|---------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------------|
| 0 <input type="radio"/> None/Never had sex | 4 <input type="radio"/> 4 | 8 <input type="radio"/> 8 | 12 <input type="radio"/> 12 | 16 <input type="radio"/> 16 | 20 <input type="radio"/> 20 |
| 1 <input type="radio"/> 1 | 5 <input type="radio"/> 5 | 9 <input type="radio"/> 9 | 13 <input type="radio"/> 13 | 17 <input type="radio"/> 17 | 21 <input type="radio"/> 21-25 |
| 2 <input type="radio"/> 2 | 6 <input type="radio"/> 6 | 10 <input type="radio"/> 10 | 14 <input type="radio"/> 14 | 18 <input type="radio"/> 18 | 22 <input type="radio"/> 26-30 |
| 3 <input type="radio"/> 3 | 7 <input type="radio"/> 7 | 11 <input type="radio"/> 11 | 15 <input type="radio"/> 15 | 19 <input type="radio"/> 19 | 23 <input type="radio"/> More than 30 |

4. How many people have you had sexual intercourse with in the **past two or three months**? **SEX2MO**

- | | | | | | |
|---------------------------------------|---------------------------|-----------------------------|-----------------------------|-----------------------------|---------------------------------------|
| 0 <input type="radio"/> Never had sex | 4 <input type="radio"/> 3 | 8 <input type="radio"/> 7 | 12 <input type="radio"/> 11 | 16 <input type="radio"/> 15 | 20 <input type="radio"/> 19 |
| 1 <input type="radio"/> None | 5 <input type="radio"/> 4 | 9 <input type="radio"/> 8 | 13 <input type="radio"/> 12 | 17 <input type="radio"/> 16 | 21 <input type="radio"/> 20 |
| 2 <input type="radio"/> 1 | 6 <input type="radio"/> 5 | 10 <input type="radio"/> 9 | 14 <input type="radio"/> 13 | 18 <input type="radio"/> 17 | 22 <input type="radio"/> More than 20 |
| 3 <input type="radio"/> 2 | 7 <input type="radio"/> 6 | 11 <input type="radio"/> 10 | 15 <input type="radio"/> 14 | 19 <input type="radio"/> 18 | |

5. How many times have you been pregnant in your **whole life**?

- | | | |
|-------------------------------|-------------------------------------|--|
| 1 <input type="radio"/> Never | 3 <input type="radio"/> Twice | 5 <input type="radio"/> Four times |
| 2 <input type="radio"/> Once | 4 <input type="radio"/> Three times | 6 <input type="radio"/> Five times or more |

6. How many times have you given birth? **PARITY**

- | | | |
|-------------------------------|-------------------------------------|--|
| 1 <input type="radio"/> Never | 3 <input type="radio"/> Twice | 5 <input type="radio"/> Four times |
| 2 <input type="radio"/> Once | 4 <input type="radio"/> Three times | 6 <input type="radio"/> Five times or more |

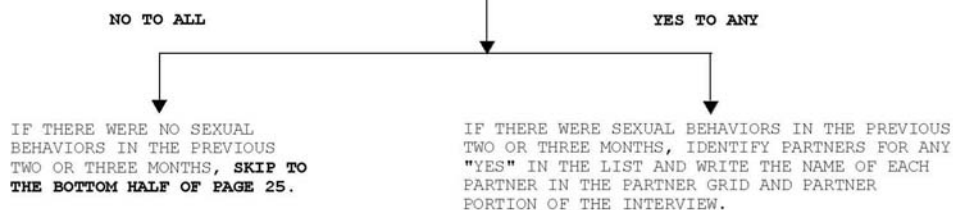
7. Are you trying to get pregnant now? **PREGTRY**

- ☐ No ☐ Yes ☐ 9 Don't know (YWP Staff Only)

8. Are you trying to keep from getting pregnant now? **PREGPREV**

- ☐ No ☐ Yes ☐ 9 Don't know (YWP Staff Only)

***Identify partners for any "Yes" to question one (Sexual Behaviors) for the past two or three months and list in the partner grid.**



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These next questions are to help us understand your relationship with different sex partners.

How would you describe your relationship with him/her? **RLSHIPT** *default = BLANK*

	RELAT_P1	RELAT_P2	RELAT_P3	RELAT_P4	RELAT_P5
1 <input type="radio"/> Don't know him/her well	<input type="radio"/> Don't know him/her well	<input type="radio"/> Don't know him/her well	<input type="radio"/> Don't know him/her well	<input type="radio"/> Don't know him/her well	<input type="radio"/> Don't know him/her well
2 <input type="radio"/> Casual Friend	<input type="radio"/> Casual Friend	<input type="radio"/> Casual Friend	<input type="radio"/> Casual Friend	<input type="radio"/> Casual Friend	<input type="radio"/> Casual Friend
3 <input type="radio"/> Good Friend	<input type="radio"/> Good Friend	<input type="radio"/> Good Friend	<input type="radio"/> Good Friend	<input type="radio"/> Good Friend	<input type="radio"/> Good Friend
4 <input type="radio"/> Boyfriend/Girlfriend	<input type="radio"/> Boyfriend/Girlfriend	<input type="radio"/> Boyfriend/Girlfriend	<input type="radio"/> Boyfriend/Girlfriend	<input type="radio"/> Boyfriend/Girlfriend	<input type="radio"/> Boyfriend/Girlfriend
5 <input type="radio"/> Fiancé	<input type="radio"/> Fiancé	<input type="radio"/> Fiancé	<input type="radio"/> Fiancé	<input type="radio"/> Fiancé	<input type="radio"/> Fiancé
6 <input type="radio"/> Spouse	<input type="radio"/> Spouse	<input type="radio"/> Spouse	<input type="radio"/> Spouse	<input type="radio"/> Spouse	<input type="radio"/> Spouse
7 <input type="radio"/> Other	<input type="radio"/> Other	<input type="radio"/> Other	<input type="radio"/> Other	<input type="radio"/> Other	<input type="radio"/> Other

How long have you known him/her? **KNOWNP** *default = BLANK*

	P1	P2	P3	P4	P5
1 <input type="radio"/> Less than a month	<input type="radio"/> Less than a month	<input type="radio"/> Less than a month	<input type="radio"/> Less than a month	<input type="radio"/> Less than a month	<input type="radio"/> Less than a month
2 <input type="radio"/> 1 or 2 months	<input type="radio"/> 1 or 2 months	<input type="radio"/> 1 or 2 months	<input type="radio"/> 1 or 2 months	<input type="radio"/> 1 or 2 months	<input type="radio"/> 1 or 2 months
3 <input type="radio"/> 3 or 4 months	<input type="radio"/> 3 or 4 months	<input type="radio"/> 3 or 4 months	<input type="radio"/> 3 or 4 months	<input type="radio"/> 3 or 4 months	<input type="radio"/> 3 or 4 months
4 <input type="radio"/> More than 4 months	<input type="radio"/> More than 4 months	<input type="radio"/> More than 4 months	<input type="radio"/> More than 4 months	<input type="radio"/> More than 4 months	<input type="radio"/> More than 4 months

How often do you see him/her? **SEEHIMP** *default = BLANK*

	P1	P2	P3	P4	P5
1 <input type="radio"/> Less than once a month	<input type="radio"/> Less than once a month	<input type="radio"/> Less than once a month	<input type="radio"/> Less than once a month	<input type="radio"/> Less than once a month	<input type="radio"/> Less than once a month
2 <input type="radio"/> A few times a month	<input type="radio"/> A few times a month	<input type="radio"/> A few times a month	<input type="radio"/> A few times a month	<input type="radio"/> A few times a month	<input type="radio"/> A few times a month
3 <input type="radio"/> Once a week	<input type="radio"/> Once a week	<input type="radio"/> Once a week	<input type="radio"/> Once a week	<input type="radio"/> Once a week	<input type="radio"/> Once a week
4 <input type="radio"/> A few times a week	<input type="radio"/> A few times a week	<input type="radio"/> A few times a week	<input type="radio"/> A few times a week	<input type="radio"/> A few times a week	<input type="radio"/> A few times a week
5 <input type="radio"/> Nearly every day	<input type="radio"/> Nearly every day	<input type="radio"/> Nearly every day	<input type="radio"/> Nearly every day	<input type="radio"/> Nearly every day	<input type="radio"/> Nearly every day

How did you meet this partner? **MEETP** *default = BLANK*

	P1	P2	P3	P4	P5
1 <input type="radio"/> School	<input type="radio"/> School	<input type="radio"/> School	<input type="radio"/> School	<input type="radio"/> School	<input type="radio"/> School
2 <input type="radio"/> Church	<input type="radio"/> Church	<input type="radio"/> Church	<input type="radio"/> Church	<input type="radio"/> Church	<input type="radio"/> Church
3 <input type="radio"/> Neighborhood	<input type="radio"/> Neighborhood	<input type="radio"/> Neighborhood	<input type="radio"/> Neighborhood	<input type="radio"/> Neighborhood	<input type="radio"/> Neighborhood
4 <input type="radio"/> Internet/Online/Chat room	<input type="radio"/> Internet/Online/Chat room	<input type="radio"/> Internet/Online/Chat room	<input type="radio"/> Internet/Online/Chat room	<input type="radio"/> Internet/Online/Chat room	<input type="radio"/> Internet/Online/Chat room
5 <input type="radio"/> Phone chat line	<input type="radio"/> Phone chat line	<input type="radio"/> Phone chat line	<input type="radio"/> Phone chat line	<input type="radio"/> Phone chat line	<input type="radio"/> Phone chat line
6 <input type="radio"/> Friends	<input type="radio"/> Friends	<input type="radio"/> Friends	<input type="radio"/> Friends	<input type="radio"/> Friends	<input type="radio"/> Friends
7 <input type="radio"/> Family	<input type="radio"/> Family	<input type="radio"/> Family	<input type="radio"/> Family	<input type="radio"/> Family	<input type="radio"/> Family
8 <input type="radio"/> Clinic	<input type="radio"/> Clinic	<input type="radio"/> Clinic	<input type="radio"/> Clinic	<input type="radio"/> Clinic	<input type="radio"/> Clinic
9 <input type="radio"/> Party	<input type="radio"/> Party	<input type="radio"/> Party	<input type="radio"/> Party	<input type="radio"/> Party	<input type="radio"/> Party
10 <input type="radio"/> Club	<input type="radio"/> Club	<input type="radio"/> Club	<input type="radio"/> Club	<input type="radio"/> Club	<input type="radio"/> Club
11 <input type="radio"/> Other	<input type="radio"/> Other	<input type="radio"/> Other	<input type="radio"/> Other	<input type="radio"/> Other	<input type="radio"/> Other

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There are many different feelings about different sex partners. Please say if you strongly disagree (1), disagree (2), agree (3) or strongly agree (4) with the following statements about your sex partners.

		<input type="radio"/> P1	<input type="radio"/> P2	<input type="radio"/> P3	<input type="radio"/> P4	<input type="radio"/> P5		
		FEEL_P1	FEEL_P2	FEEL_P3	FEEL_P4	FEEL_P5		
STRONGP								
We have a strong emotional relationship.	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4
SPENDP								
We enjoy spending time together.	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4
IMPORTP								
He/she is a very important person in my life.	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4
LOVEP								
I think I am in love with him/her.	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4
HAPPYP								
I feel happy when we are together.	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4
USTANDP								
I think I understand him/her as a person.	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4	<input type="radio"/> 1 1	<input type="radio"/> 2 2	<input type="radio"/> 3 3	<input type="radio"/> 4 4



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Partner Network Grid

Now we'd like to learn more about how well
your sex partners know your family and each
other. Here are the choices to use.

0. Don't know each other at all
1. Know each other some
2. Know each other very well

		○ P1	○ P2	○ P3	○ P4	○ P5
		NET_P1	NET_P2	NET_P3	NET_P4	NET_P5
Mother	MOTHERP	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
Father	FATHERP	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
Grandmother	GRANDMP	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
Sister	SISTERP	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
Brother	BROTHERP	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
Cousin	COUSINP	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
Spouse	F1P	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
F1	F2P	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
F2	F3P	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
F3	F4P	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
F4	F5P	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
F5	F6P	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
F6	F7P	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2
F7		○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2	○ ○ ○ 0 1 2



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How long ago did you first have any type of sex with (x)? [Insert #, in months] [Insert Date, MM/DD/YYYY]
(vaginal, oral or anal)

		FIRSTMON		FIRSTDTE	
SEX_P1	<input type="radio"/> P1				
SEX_P2	<input type="radio"/> P2				
SEX_P3	<input type="radio"/> P3				
SEX_P4	<input type="radio"/> P4				
SEX_P5	<input type="radio"/> P5				

	P1	P2	P3	P4	P5
In the past two or three months, how many times did you have sex with (x)? [Insert number] TIMESP					
How many of these times did you use a condom/dental dam with (x)? [Insert number] USECONP					
Did you use a condom/dental dam the last time you had sex with (x)? LASTP	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes

9. When did you last have any type of sex? **LASTSEX** / /

10. When was your last period? **PERIOD** / /

11. Are you pregnant now? **PREGNANT** Yes ☐ No ☐ Month of pregnancy **PREGMTH** default = 0

If no, move to question 12.

If yes and sexual behaviors were reported on page 15, skip to page 26.

If yes and no sexual behaviors were reported on page 15, skip to page 33.

12. Would you strongly disagree, disagree, agree, or strongly agree to this statement? **NOGETPRG**

"I am very committed to not getting pregnant at this time in my life."

1 2 3 4
☐ Strongly Disagree ☐ Disagree ☐ Agree ☐ Strongly Agree

If sexual behaviors were reported on page 15, move to page 26.

If no sexual behaviors were reported on page 15, skip to page 33.



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Now, let's think about each of the **partners** we've been talking about. Please rate each partner in terms of these characteristics.

default = BLANK
(ENTIRE PAGE)

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

Partner	CHAR1_P1	CHAR1_P2	CHAR1_P3	CHAR1_P4	CHAR1_P5
PARTNER					
A nice body NICEBDYP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
A cute face CUTEFACT	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Likes to dress well DRESWELP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Is good at sports GDSPTISP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Smells nice SMELNCEP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Is always nice to me NICETME	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Treats me with respect TRRSPECTP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Is easy to talk to EASYTLKP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Interested in the things I'm interested in INTRSTP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Lives in my neighborhood LIVSNBHP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Believes in the same things I do SAMTHGSP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Likes to have fun HAVEFUNP	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4



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Now, let's think about each of the **partners** we've been talking about. Please rate each partner in terms of these characteristics.

default = BLANK

(ENTIRE PAGE)

1. Strongly Disagree 2. Disagree 3. Agree 4. Strongly Agree

Partner	P1				P2				P3				P4				P5			
PARTNER	CHAR2_P1				CHAR2_P2				CHAR2_P3				CHAR2_P4				CHAR2_P5			
Able to express feelings EXPSEMT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has a good sense of humor SENSHMRP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Likes kids LIKEKDSP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Willing to take chances TAKCHNCP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Able to take care of himself/herself TAKCAREP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wants to get something out of life SOMWHREP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Intelligent INTLGNT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Popular with other people POPULARP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cares for others CAROTHRP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Comes from a good family GDFAMILYP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has a nice car NICECARP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Has money HAMONYP	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



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Now, we'd like for you to compare yourself to your partner. For each of the characteristics I read, say whether it is more like your partner than you, about the same for both of you, or more like you than your partner.

1. Like my partner but not me 2. Like both of us 3. Like me but not my partner

Partner		○ P1	○ P2	○ P3	○ P4	○ P5
	PARTNER	COMPR_P1	COMPR_P2	COMPR_P3	COMPR_P4	COMPR_P5
A nice body	NBCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
A cute face	CFCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Likes to dress well	DWCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Is good at sports	GSCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Smells nice	SNCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Is easy to talk to	ETCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Likes to have fun	HFCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Able to express feelings	EFCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Has a good sense of humor	SHCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Likes kids	LKCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Willing to take care of	TCCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
himself/herself	TRCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Wants to get somewhere in life	SWCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Intelligent	INCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Popular with other people	PLCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Cares for others	COCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Comes from a good family	GFCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Has a nice car	NCCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3
Has money	HMCOMPRP	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3	○ ○ ○ 1 2 3



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These next questions are about your relationship with your sex partners. Please answer each question for each of the sex partners you mentioned.

*1= Definitely No
2= Maybe
3= Definitely Yes

**1= Never
2= Some
3= A Lot

***1= Not at all
2= Somewhat
3= Mostly
4= Completely

Partner	<input type="radio"/> P1	<input type="radio"/> P2	<input type="radio"/> P3	<input type="radio"/> P4	<input type="radio"/> P5
	INTER_P1	INTER_P2	INTER_P3	INTER_P4	INTER_P5
Do you live with him/her?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
Have you had a baby with him?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
Does he/she give you money of any kind of sex?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
Did he/she ever make you have any kind of sex when you didn't want to?	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes	<input type="radio"/> No <input type="radio"/> Yes
Would he/she get mad if you didn't want to have sex?*	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
Would he/she break up with you unless you would have sex?*	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
How often does he/she drink alcohol before you have any kind of sex?***	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
How often does he/she smoke weed before you have any kind of sex?***	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
How often do you drink alcohol before you have any kind of sex with him/her?***	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
How often do you smoke weed before you have any kind of sex with him/her?***	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
How well does this partner meet your sexual needs?***	<input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
How well does this partner meet your needs for friendship?***	<input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
How committed are you to this partner?***	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
How often do you feel ashamed after having sex with this partner?***	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
How often do you feel content after having sex with this partner?***	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
Do you think you will get involved with another partner in the next three months?*	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
This partner lets me be myself.*	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3
Does this partner mind if you spend time with your friends.*	<input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3

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Relationship in General **TABLE = PARTNER-GENRL**

This next set of questions has to do with your feelings about your relationship in general. Please answer for each relationship in the past two or three months.

GENRL_P1	GENRL_P2	GENRL_P3	GENRL_P4	GENRL_P5
<input type="radio"/> GENRLBGP	Very Bad	← 1 2 3 4 5 6 7 →	Very Good	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
<input type="radio"/> GENRLUPP	Very Unpleasant	← 1 2 3 4 5 6 7 →	Very Pleasant	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
<input type="radio"/> GENRLNPP	Very Negative	← 1 2 3 4 5 6 7 →	Very Positive	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
<input type="radio"/> GENRLUSP	Very Unsatisfying	← 1 2 3 4 5 6 7 →	Very Satisfying	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
<input type="radio"/> GENRLWV	Worthless	← 1 2 3 4 5 6 7 →	Very Valuable	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7

Sexual Relationship **TABLE = PARTNER-SEXRI**

This next set of questions has to do with your feelings about your sexual relationship. Please answer for each relationship in the past two or three months.

SEXRI_P1	SEXRI_P2	SEXRI_P3	SEXRI_P4	SEXRI_P5
<input type="radio"/> SEXRLBGP	Very Bad	← 1 2 3 4 5 6 7 →	Very Good	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
<input type="radio"/> SEXRLUPP	Very Unpleasant	← 1 2 3 4 5 6 7 →	Very Pleasant	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
<input type="radio"/> SEXRLNPP	Very Negative	← 1 2 3 4 5 6 7 →	Very Positive	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
<input type="radio"/> SEXRLUSP	Very Unsatisfying	← 1 2 3 4 5 6 7 →	Very Satisfying	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7
<input type="radio"/> SEXRLWVP	Worthless	← 1 2 3 4 5 6 7 →	Very Valuable	
1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7	1 2 3 4 5 6 7



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Some people think it's hard to talk to sex partners about sex and about using protection. Please tell me if you strongly disagree, disagree, agree or strongly agree when I read some of the things people talk about. Please answer for each sex partner you mentioned earlier.

1=Strongly Disagree 2=Disagree 3=Agree 4=Strongly Agree

Partner	TALK_P1	TALK_P2	TALK_P3	TALK_P4	TALK_P5
It's easy for me to say no if I don't want to have sex SAYNOP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
It's easy for him/her to take advantage of me ADVNTGP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
Sometimes things just get out of control with him/her OOCTRLP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
I am comfortable talking to him/her about sex ABTSEXP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
It is easy to talk to him/her about using condoms/dental dams ABTCDMP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
It is easy to talk to him/her about using birth control ABTBCP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
It will be easy to use a condom/dental dam if we have sex EZUSEP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
It will be easy to help him/her put on/use a condom/dental dam if we have sex EZHELPP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
I won't have sex with him/her unless we use a condom/dental dam NOTWOCP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
He/She thinks condoms/dental dams are good for protection GOODP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
He/She thinks condoms/dental dams are easy to use EASYP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
He/She will have a condom/dental dam if we want to have sex HAVEP	<input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4



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There are many different reasons for having sex with someone. For each of the reasons I read, please say whether that is not important, a little important or very important. I will ask about each sex partner you mentioned earlier.

1=Not Important 2=A Little Important 3=Very Important

Partner	<input type="radio"/> P1	<input type="radio"/> P2	<input type="radio"/> P3	<input type="radio"/> P4	<input type="radio"/> P5
To strengthen our relationship	<div>REAS_P1</div> <div>1 2 3</div>				
It feels good	<div>STGTHNP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
My sex partner wants to	<div>FEELP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
It makes me feel needed	<div>PTRWNTP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
Because I feel very sexy with him/her	<div>NEEDEP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
Just for fun	<div>SEXP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
Because he/she wants it	<div>FORFNP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
For the thrill	<div>HEWANTP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
It makes me feel loved	<div>THRILLP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
It helps me relax	<div>LOVEDP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
Because things get out of control	<div>RELAXP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
Because there's nothing else to do	<div>CNTRLP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
Because I want it	<div>NOELSEP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
Because I feel good with him/her	<div>IWANTP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
Because he/she makes me	<div>WITHP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
Because we are in love	<div>MAKEMEP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
I'm trying to get pregnant	<div>INLUVP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
My partner wants me to get pregnant	<div>GETPGTP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
It just happens	<div>JUSHPNP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>
It makes us closer	<div>CLOSERP</div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>	<div><input type="radio"/> <input type="radio"/> <input type="radio"/></div> <div>1 2 3</div>

38597



Young Women's Project
Subject Interview
(Form ID 38597)



TABLE = INTVIEWSB

These next questions are about feelings some people might have about sexual activity. Thinking about the past two or three months, how often have you had any of these feelings?

	1 Never	2 Rarely	3 Sometimes	4 Almost all of the time
How often do you feel unable to control your sexual behavior?	UNABCTL <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do you use sex to deal with problems in your life?	DEALPROB <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do you feel shameful about your sexual behavior?	SHAMEFUL <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do you make promises to change your sexual behavior?	PROMCHNG <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do you feel emotionally close when having sex?	EMOTDIST <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often do you feel that your sexual behavior is not normal?	ABNSEXBH <input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

IF THERE WERE NO SEXUAL BEHAVIORS IN THE PREVIOUS TWO OR THREE MONTHS, THIS CONCLUDES THE INTERVIEW. OTHERWISE, CONTINUE WITH PAGES 33 AND 34.

Microbicides may be one way of preventing sexually transmitted disease and infection, but not for treating or curing infections. Microbicides are still being studied by researchers, which means that you can't buy them in stores or get a prescription for them yet. Microbicides are a little bit like spermicides. A spermicide is a cream, jelly or pill that women put in their vagina to keep from getting pregnant. Spermicides work by killing sperm before they cause pregnancy. Microbicides work in a similar way, by killing some kinds of germs before they cause a sexually transmitted disease. Microbicides are also like spermicides because they have to be used every time a person has sex.

Please answer for each sex partner you mentioned earlier.

1=Strongly disagree 2=Disagree 3=Agree 4=Strongly agree

Partner	<input type="radio"/> P1	<input type="radio"/> P2	<input type="radio"/> P3	<input type="radio"/> P4	<input type="radio"/> P5
It would be easy for me to use a microbicide if we have sex.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
It would be easy for me to talk to him about me using a microbicide.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
It would be easier for me to use a microbicide than a condom for protection against an STD.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4
If I used a microbicide with this partner I wouldn't use a condom too.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4



Appendix E

Curriculum Vitae

BARBARA JEAN VAN DER POL
bvanderp@iupui.edu

Date of Birth: January 25, 1959

Place of Birth: Inglewood, California

Citizenship: United States

Marital Status: Married, one child, age 19

Present Rank: Research Associate
Indiana University School of Medicine
Department of Medicine

Education: Indiana University BS Biology – 1981
Indiana University Masters Degree in Public Health
(epidemiology) – 2001
Indiana University Doctor of Philosophy in Health
Behavior 2007

Professional Societies: American Academy of Health Behavior
American Public Health Association
American Society for Microbiology
American Association for the Advancement of Science
American Sexually Transmitted Diseases Association
International Union against Sexually Transmitted
Infections

Consulting Relationships: Family Health International
Roche Diagnostic Corporation
Clinical Laboratory Standards Institute PEPFAR Volunteer
CDC Region V Infertility Prevention Project
University of California San Francisco MIRA Trial
Abbott Molecular Diagnostics

Ad Hoc Reviewer for: Sexually Transmitted Diseases
Journal of Clinical Microbiology
Infection & Immunology
Antimicrobial Agents & Chemotherapy
Journal of Infectious Diseases
Clinical Infectious Diseases
WHO/STD Diagnostics Initiative

Student Mentoring: Program	Vivian Ghindi	Howard Medical Student Summer
	Greg Dawkins	Howard Medical Student Summer
	Colleen Kendrick	Indiana University School of
	Medicine 3 rd & 4 th year	Student Rotations
	Amanda Army	Indiana University School of
	Medicine	
	Michael Hogan	Howard Medical Student Summer
Program	Katrina Samuels	Howard Medical Student Summer
	Emily Jarvis	IU Department of Public Health
	Master's	Project

Peer-Reviewed Publications:

1. Morrison, CS, J Wang, B Van Der Pol, N Padian, R Salata, and BA Richardson. Pregnancy and the risk of HIV-1 acquisition among women in Uganda and Zimbabwe. *AIDS*, 2007. **21**: p. 1027-1034.
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3. Morrison, CS, BA Richardson, F Mmiro, T Chipato, DD Celentano, J Luoto, et al. Hormonal contraception and the risk of HIV acquisition. *AIDS*, 2007. **21**(1): p. 85-95.
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